LCD-TV

Chassis	Model
GTR23KE	LE23T51B
GTR27KE	LE27T51B
GTR32KE	LE32T51B

SERVICE *Manual*

LCD TV



Fashion Feature

- RF, DVI-D, PC(Analog), 2Scart, Component,
  Video, S-Video
- Brightness : 500cd/㎡
- Contrast Ratio :
  23": 800:1, 27": 1000:1, 32": 800:1
- Respense time : 16ms
- Dynamic contrast
- PIP (on PC only)

Samsung Electronics Co.,Ltd.
416, Maetan-3Dong, Yeongtong-Gu, Suwon City,
Gyeonggi-Do, Korea, 443-742
Printed in Korea
P/N : BN82-00128R-01
URL : http://itself.sec.samsung.co.kr/

LCD-TV

Chassis	Model
GTR23KE	LE23T51B
GTR27KE	LE27T51B
GTR32KE	LE32T51B
GTR32KE	LE32T51S

SERVICE Manual

LCD TV



Fashion Feature

- RF, DVI-D, PC(Analog), 2Scart, Component, Video, S-Video
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1 Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1 Safety Precautions

1-1-1 Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2 Servicing the LCD Monitor

1. When servicing the LCD Monitor, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3 Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):

   WARNING : Do not use an isolation transformer during this test.

   Use a leakage current tester or a metering system that complies with American National Standards Institute (*ANSI C101.1, Leakage Current for Appliances*), and Underwriters Laboratories (*UL Publication UL1410, 59.7*).

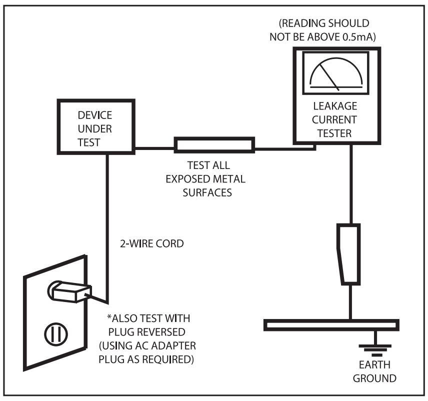


Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4 Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2 Servicing Precautions

WARNING: An electrolytic capacitor installed with the wrong polarity might explode.

Caution: Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
   (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Electrostatically Sensitive Devices (ESD) Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.

2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.

3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.

4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.

5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.

6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.

7. When installing the product, leave enough space (10cm) between the product and the wall for ventilation purposes.
   A rise in temperature within the product may cause fire.

Memo

2 Product Specifications

2-1 Fashion Feature

- RF, DVI-D, PC(Analog), 2Scart, Component, Video, S-Video
- Brightness : 500cd/㎡
- Contrast Ratio :
  23": 800:1, 27": 1000:1, 32": 800:1
- Respense time : 16ms
- Dynamic contrast
- PIP (on PC only)

2-2 Specifications

2-2-1 LE23T51B Specifications

Item	Description	
LCD Panel	TFT-LCD panel, RGB vertical stripe, normaly white, 23-Inch viewable, 0.372 (H) x 0.372(V)mm pixel pitch	
Scanning Frequency	Horizontal : 30 kHz ~ 61 kHz (Automatic) Vertical : 60 Hz ~ 75 Hz (Automatic)	
Display Colors	16.7 Million colors	
Maximum Resolution	Horizontal : 1360 Pixels Vertical : 768 Pixels	
Input Video Signal	Analog 0.7 Vp-p ±5% positive at 75Ω, internally terminated	
Input Sync Signal	Type : Seperate H/V Level : TTL level	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	508.125 mm / 285.696 mm	
AC power voltage & Frequency	AC 220 ~ 240 V, 50~60 Hz	
Power Consumption	< 100W (< 2W, stand by)	
Dimensions(W x D x H) Set	26.61 x 3.35 x 15.49 inches(675.9 x 85.0 x 393.4 mm) Body 26.61 x 8.02 x 17.30 inches (675.9 x 203.8 x 439.5 mm) With stand	
Weight Set(With stand)	16.76 lbs (7.6Kg)	
Environmental Considerations	Operating Temperature : 50 °F ~ 104 °F (10°C ~ 40°C) Operating Humidity : 10 % ~ 80 % Storage Temperature : -4 °F ~ 113 °F (-20°C ~ 45°C) Storage Humidity : 5 % ~ 95 %	
TV System	Tunning	Frequency Synthesize
	System	PAL, SECAM-B/G, D/K, I, I/I, L/L, NTPB (AV3.58, 4.43)
	Sound	BG, DK, I, L (A2/NICAM)
Antena Input	75Ω	
Sound Characteristic	- MAX Internal speaker Out : Right => 3W, Left => 3W	
	- BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz A/V : 80 Hz ~ 20 kHz	

2-2-2 LE27T51B Specifications

Item	Description	
LCD Panel	TFT-LCD panel, RGB vertical stripe, normaly white, 27-Inch viewable, 0.1460 (H) x 0.4365(V)mm pixel pitch	
Scanning Frequency	Horizontal : 30 kHz ~ 61 kHz (Automatic) Vertical : 60 Hz ~ 75 Hz (Automatic)	
Display Colors	16.7 Million colors	
Maximum Resolution	Horizontal : 1360 Pixels Vertical : 768 Pixels	
Input Video Signal	Analog 0.7 Vp-p ±5% positive at 75Ω, internally terminated	
Input Sync Signal	Type : Seperate H/V Level : TTL level	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	596.259 mm / 335.232 mm	
AC power voltage & Frequency	AC 220 ~ 240 V, 50~60 Hz	
Power Consumption	< 140W (< 2W, stand by)	
Dimensions(W x D x H) Set	30.18 x 3.78 x 18.07 inches (766.5 x 96.0 x 459.0 mm) Body 30.18 x 6.02 x 19.90 inches (766.5 x 203.8 x 505.5 mm) With stand	
Weight Set(With stand)	26.46 lbs (12.0 kg)	
Environmental Considerations	Operating Temperature : 50 °F ~ 104 °F (10 °C ~ 40 °C) Operating Humidity : 10 % ~ 80 % Storage Temperature : -4 °F ~ 113 °F (-20 °C ~ 45 °C) Storage Humidity : 5 % ~ 95 %	
TV System	Tunning	Frequency Synthesize
	System	PAL, SECAM-B/G, D/K, I, I/I, L/L, NTPB (AV3.58, 4.43)
	Sound	BG, DK, I, L (A2/NICAM)
Antena Input	75Ω	
Sound Characteristic	- MAX Internal speaker Out : Right => 5W, Left => 5W	
	- BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz A/V : 80 Hz ~ 20 kHz	

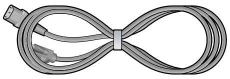
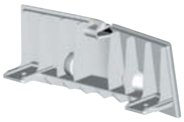
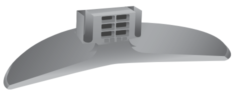
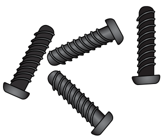
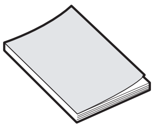
2-2-3 LE32T51B Specifications

Item	Description	
LCD Panel	TFT-LCD panel, RGB vertical stripe, normaly white, 32-Inch viewable, 0.511 (H) x 0.511(V)mm pixel pitch	
Scanning Frequency	Horizontal : 30 kHz ~ 61 kHz (Automatic) Vertical : 60 Hz ~ 75 Hz (Automatic)	
Display Colors	16.7 Million colors	
Maximum Resolution	Horizontal : 1360 Pixels Vertical : 768 Pixels	
Input Video Signal	Analog 0.7 Vp-p ±5% positive at 75Ω, internally terminated	
Input Sync Signal	Type : Seperate H/V Level : TTL level	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	697.69 mm / 392.26 mm	
AC power voltage & Frequency	AC 220 ~ 240 V, 50~60 Hz	
Power Consumption	< 170 W (< 2W, stand by)	
Dimensions(W x D x H) Set	36.00 x 4.09 x 20.82 inches (914.5 x 104.0 x 528.8 mm) With stand 36.00 x 9.74 x 23.29 inches (914.5 x 247.5 x 591.5 mm) Body	
Weight Set(With Stand)	33.07 Ibs (15.0 Kg)	
Environmental Considerations	Operating Temperature : 50 °F~ 104 °F (10 °C ~ 40 °C) Operating Humidity : 10 % ~ 80 % Storage Temperature : -4 °F ~ 113 °F (-20 °C ~ 45 °C) Storage Humidity : 5 % ~ 95 %	
TV System	Tunning	Frequency Synthesize
	System	PAL, SECAM-B/G, D/K, I, I/I, L/L, NTPB (AV3.58, 4.43)
	Sound	BG, DK, I, L (A2/NICAM)
Antena Input	75Ω	
Sound Characteristic	- MAX Internal speaker Out : Right => 7.5W, Left => 7.5W	
	- BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz A/V : 80 Hz ~ 20 kHz	

2-2-4 Spec Comparison

Model	LE23T51B / LE27T51B / LE32T51B	LE23R41B / LE26R41B / LE32R41BX
Design		
Frequency **Horizontal** **Vertical** **Display Color**	30 ~ 61 kHz 60 ~ 75 Hz 16,777,216 colors	30 ~ 61 kHz 60 ~ 75 Hz 16,777,216 colors
PC Resolution **Maximum mode**	1360 x 768 / 60 Hz	1360 x 768 / 60 Hz
Input Signal **Sync Signal** **Video Signal**	H/V Separate, TTL, P. or N. 0.7 Vp-p @ 75ohm	H/V Separate, TTL, P. or N. 0.7 Vp-p @ 75ohm
Power Consumption **Normal** **Power Saving**	100W / 140W / 170W < 2W	100W / 140W / 170W < 1W
Input source Difference	DVI-D	HDMI
PIP	PIP(PC Only)	PIP, POP
Sound	3W / 5W / 7.5W	3W / 5W / 10W

2-3 Option Specification

Item	Item Name	Code.No	Remark
	Remote Control & Batteries (AAA x 2)	BN59-00488A	
	Power Cord	3903-000042	
	Cover-Bottom	BN63-02177A	
	Stand	23, 27" : BN96-02639A 32" : BN96-02633A	
	Stand Screw (4 ea)	6002-001294	
	Owner's Instructions	BN68-00860C	

3 Alignments and Adjustments

3-1 General Alignment Instuction

1. Usually, a color LCD-TV needs only slight touch-up adjustment upon installation.
   Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
7. To protect aganist shock hazard, use an isolation transform.

3-2 Factory Mode Adjustments

3-2-1 Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control

Power OFF → INFO → MENU → MUTE → Power On

3-2-2 Panel Check

- Specially for LE32T51BX, You have to check Panel Maker Because of different adjustments as follows. First of all, Check the label rating!

1) Label Rating File



* If not printed you could consider S(sec) panel mark.

2) If Panel Mark is "S", Set the factory mode indicating as follows.
   * Option Byte
   1. Panel Option : 32" AMLCD

   If Panel Mark is "A", Set the factory mode indicating as follows.
   * Option Byte
   1. Panel Option : 32" AUO

   Others are same shown below.

3-2-3 Factory Mode Tree

- If you have Factory remote - control

[INFO] -> [FACTORY]

1. Calibration
2. Option Byte
3. W/B
4. VCTi
5. YC Delay
6. FLI5961
7. Adjust
8. Test Pattern
9. Password
10. Check Sum
11. Spread Spectrum
12. HDCP
13. Reset
    T-TRNPEU-0000 month day year time
    P-TRNPEU-0000
    Panel On Time(Hour) 0000

1. Calibration	: W/B Calibration
AV Calibration	
DTV Calibration	
PC Calibration	

2. Option byte	: Setting option
Panel option	: 23" AMLCD, 27" CMO, 32" AUO, 32" AMLCD
Gamma	: on/off
Auto Power	: on/off
Video Mute	: 5
Language	: English
Hotel Mode	: off/on
LNA Plus	: off/on
V-chip	: off
Auto FM	: off/on
High Deviation	: off/on
TTX List	: Flop/List
MCC	: off/on
TTX Group	: User OSD
DVI	: on/off

3. W/B	: Adjustment White Balance
Sub Bright	: 128
R off set	: 128
G off set	: 128
B off set	: 128
Sub contrast	: 128
R gain	: 128
G gain	: 128
B gain	: 128

4. VCTi	: VCTi IC Correct register
VCTi Page 1	
VCTi Page 2	

1. Calibration
2. Option Byte
3. W/B
4. VCTi
5. YC Delay
6. FLI5961
7. Adjust
8. Test Pattern
9. Chip Debugger
10. Check Sum
11. Spread Spectrum
12. HDCP
13. Reset

T-TRNPEU-0000 month day year time
P-TRNPEU-0000
Panel On Time(Hour) 0000

5. YC Delay

RF PAL-B/G	: 5
RF PAL-D/K	: 6
RF PAL-I	: 5
RF PAL-L/L'	: 5
RF SECAM-B/G	: 2
RF SECAM-D/K	: 0
RF SECAM-I	: 2
RF SECAM-L/L'	: 5
RF NTSC 3.58	: 5
RF NTSC 4.43	: 5
AV PAL	: 5
AV SECAM	: 2
AV NTSC 3.58	: 5
AV NTSC 4.43	: 5
AV PAL 60	: 5

6. FLI5961 : Scaler IC Correct register

Component Calibration: Result DTV Calibration
PC Calibration : Result PC Calibration
ACC/ACM
TNR
Picture Enhance

7. Adjust

User Control Initial
LNA PLUS
Hotel Option

8. Test Pattern : VCTi IC'S own test patterns. (Total 7 patterns)

9. Password : Use IC Register Correction.

10. Check Sum : 0000

11. Spread Spectrum

Spread Spectrum : on/off
Spread Spectrum Range : 2
Step : 63

12. HDCP : 0000

13. Reset

3-3 White Balance - Calibration

3-3-1 White Balance -Calibration

1. Calibration	→	DTV Calibration PC Calibration (Calibration Condition refer to next page)

3-3-2 White Balance - Adjustment

		(low light)	(hight light)
3. W/B	→	Sub Bright R offset G offset B offset	Sub Contrast R gain G gain B gain

(W/B adjustment Condition refer next page)

3-3-3 Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
   - INPUT SIGNAL GENERATOR : MSPG-925LTH
     * Mode NO 1 : 744X484@60 Hz
       NO 6 : 1280X720@60 Hz (Component 720P)
       NO 21 : 1024X768@60 Hz
     * Pattern NO 15 : Color bar
       NO 16 : Toshiba ABL Pattern
       NO 17 : 16 gray
2. Optical measuring device : CA210 (FL)
   Please use the MSPG-925 LTH generator for model LNR2355W,LNR2755W,LNR3255W.

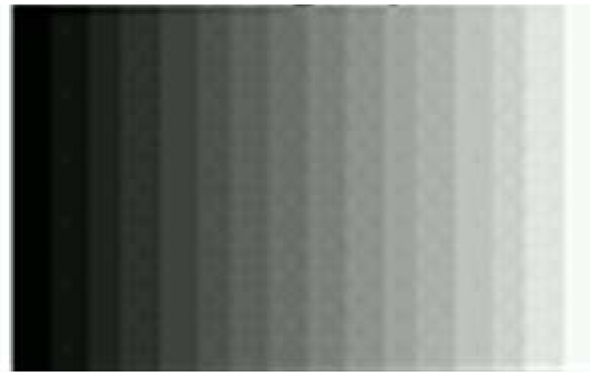
3-3-4 Method of Adjustment

1. Adjust the basic level of Component and PC input signals.
   a) Set the input to the mode in which the adjustment will be made (Component ⟶ PC).
   * Input signal - Component Mode : Model #6 (1280*720 Mode), Pattern #15 (picture 4-1)
     - PC Mode : Model #21 (1024*768 Mode), Pattern #17 (Picture 4-2)
   b) Enter factory Calibration (DTV, PC Mode Only).
   * DTV Calibration ⟶ Source change for PC ⟶ PC Calibration

Picture 4-1 Color bar



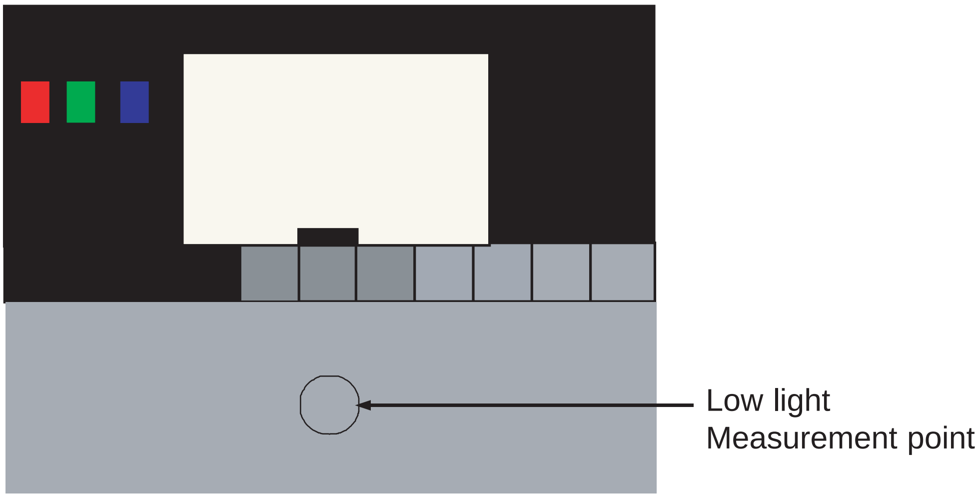
Picture 4-2 16gray



2. Adjust the white balance of AV, Component and DVI Modes.
   a) Set the input to the mode in which the adjustment will be made (AV ⟶ Component ⟶ DVI).
   * Input signal - VIDEO Mode : Model #1 (744*484 Mode), Pattern #16
     - Component, DVI Mode : Model #6 (1280*720 Mode), Pattern #16
   b) Enter factory W/B.

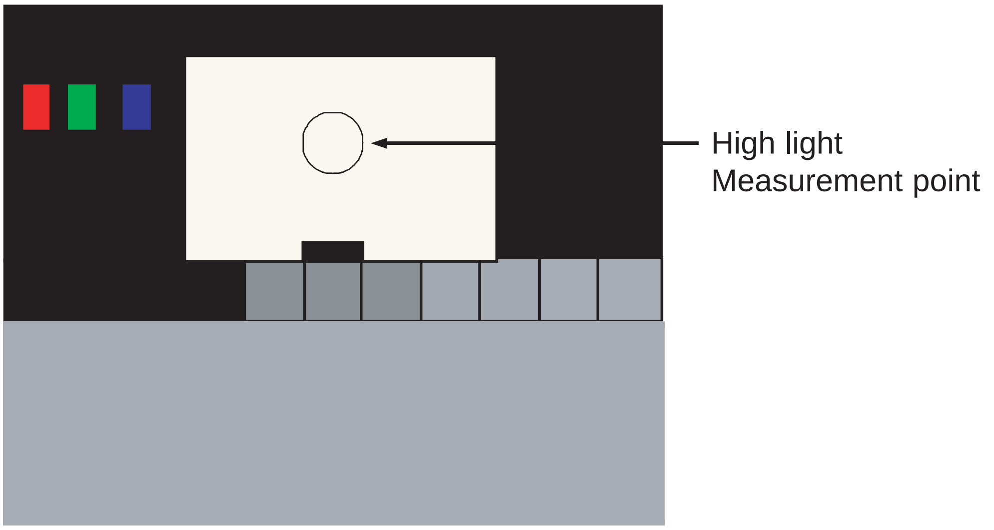
   c) Adjust the low light.
      - Adjust sub - Brightness to set the 'Y' value.
      - Adjust red offset ('x') and blue offset ('y') to the color coordinates. (x : 263, y : 267, Y : 1.3 ft)
      * Do not adjust green offset data.

Picture 4-3 Toshiba ABL Pattern



d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)
- Adjust red gain ('x') and blue gain ('y') to the color coordinates. (x : 263, y : 267)
* Do not adjust the green gain and sub-contrast (Y) data.
* (Only RE32T51BX) If Panel is AM-LCD, Y adjust 36FT/L.

Picture 4-4 Toshiba ABL Pattern

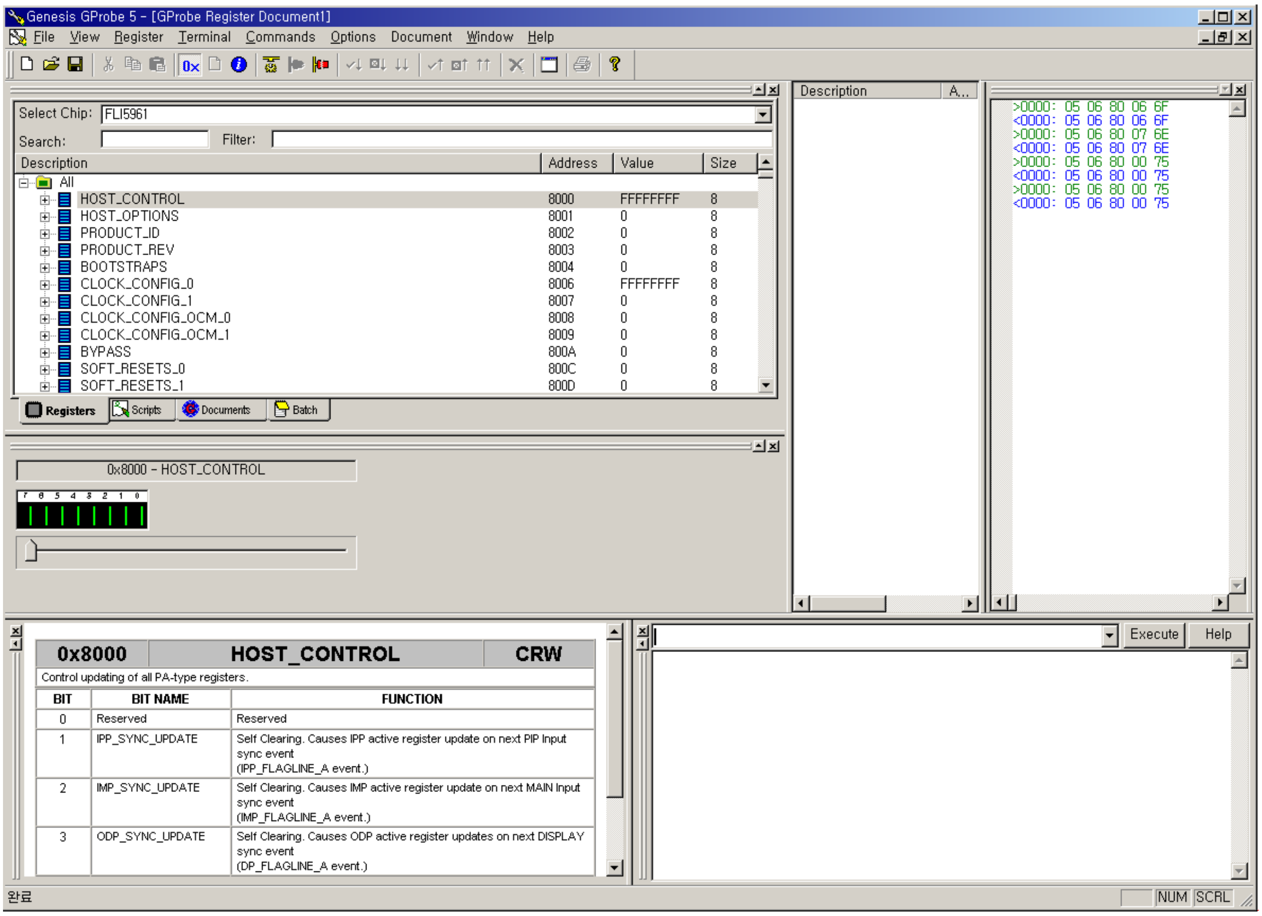


3-4 TORINO Micom Update

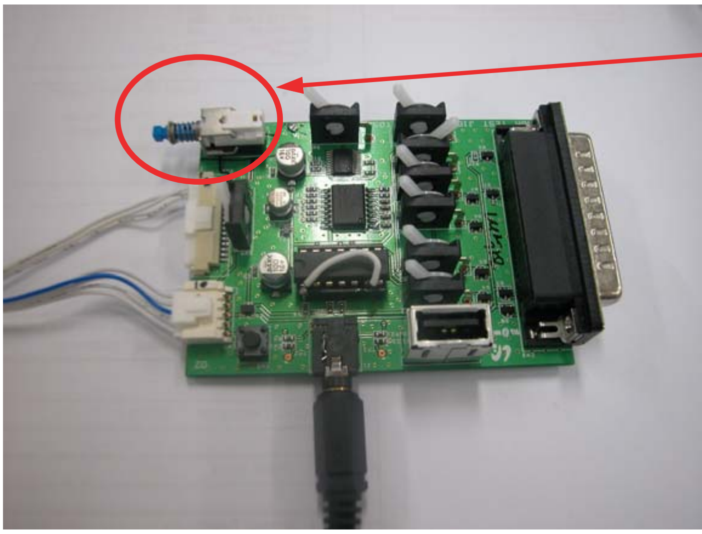
3-4-1 Installing G-Probe

1. Uncompress GProbe5.1.0.18.zip.
2. Run GProbe5.1.0.18.exe.
3. The files are created in the C:₩Program Files₩Genesis Microchip₩GProbe 5 folder.
4. Copy the ispoak_spi.hex file to the C:₩Program Files₩Genesis Microchip₩GProbe 5 folder.
5. Uncompress FLI5961-AC_GProbe_S0006-CSC-33B.zip.
6. Three files are extracted (FLI5961.Chip.GProbe, FLI5961.chm).
7. Copy all 2 files to the C:₩Program Files₩Genesis Microchip₩GProbe 5₩ChipDB folder.
8. Run GProbe.exe in the C:₩Program Files₩Genesis Microchip₩GProbe 5 folder. The G-Probe program is created.

<The screen that appears when G-Probe is successfully installed>

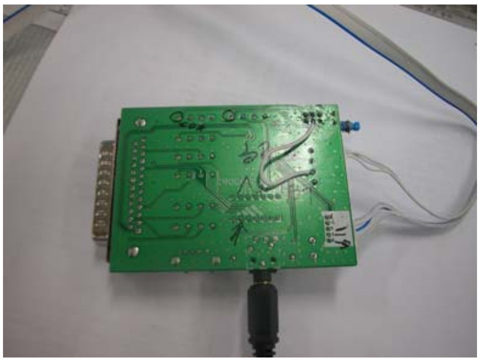


3-4-2 Connecting to the MAIN PCB

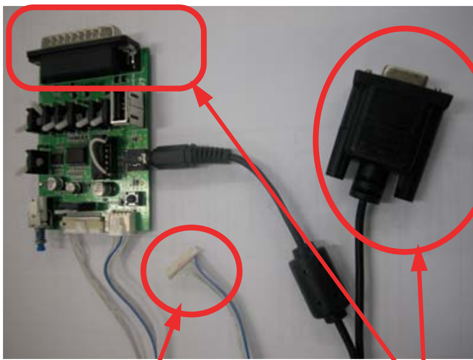


Switch off

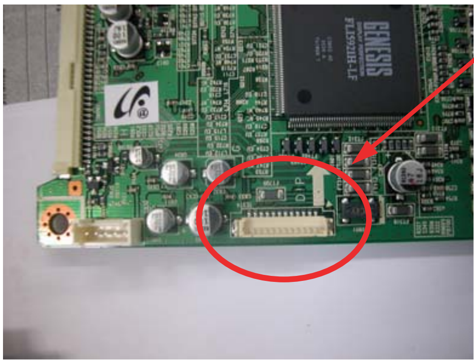
<Micom Download Jig Top Side: Note the direction of the switch>



<Bottom Side>



Connect to the MAIN PCB. Connect to the PC



3-4-3 Update Procedures

1. Open mgm.txt in the C:₩Program Files₩Genesis Microchip₩GProbe 5 folder.

2. The following result will appear.

```
//
// Batch file to program a sPI serial flash using ISP.
// Moving the stack to high memory area is now taken care of in IROM
// through the "Reset 0" command. Assumes the ISP driver is in the same
// directory as this file. Change ISP driver path in "fastFlashWrite"
// command, if different from current directory.
//
debugon

SetBuffer 0x2000 0x800
delay 200
Reset 0
delay 500

// SPI flash driver
RAMWrite ispoak_spi.hex

Run 0x500
delay 100

// Optional - Get Flash ID. The second parameter is a don't care
//FLASHCRC 0xff0000 0x20000

// Command delay for flash erase
SetDelay 1000 9000

FlashErase

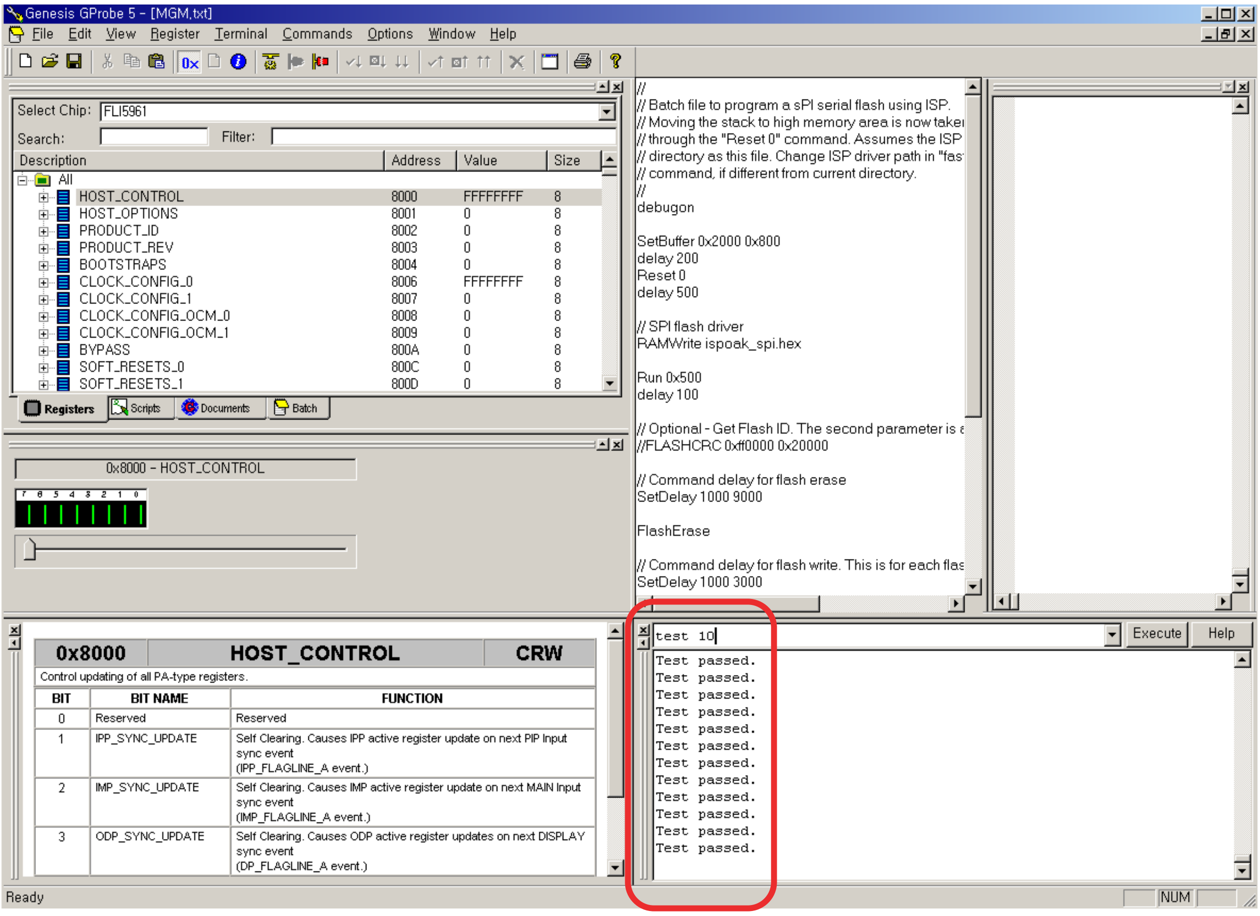
// Command delay for flash write. This is for each flash write packet (upto 4 k Bytes)
SetDelay 1000 3000

// Change this line to point to a file in a different location, if needed
//fastFlashWrite C:₩Proj₩OAK₩APP-59xx₩debug₩obj₩59xx_proj.hex
fastFlashWrite C:₩Program Files₩Genesis Microchip₩GProbe 5₩T_TRNNUS.hex

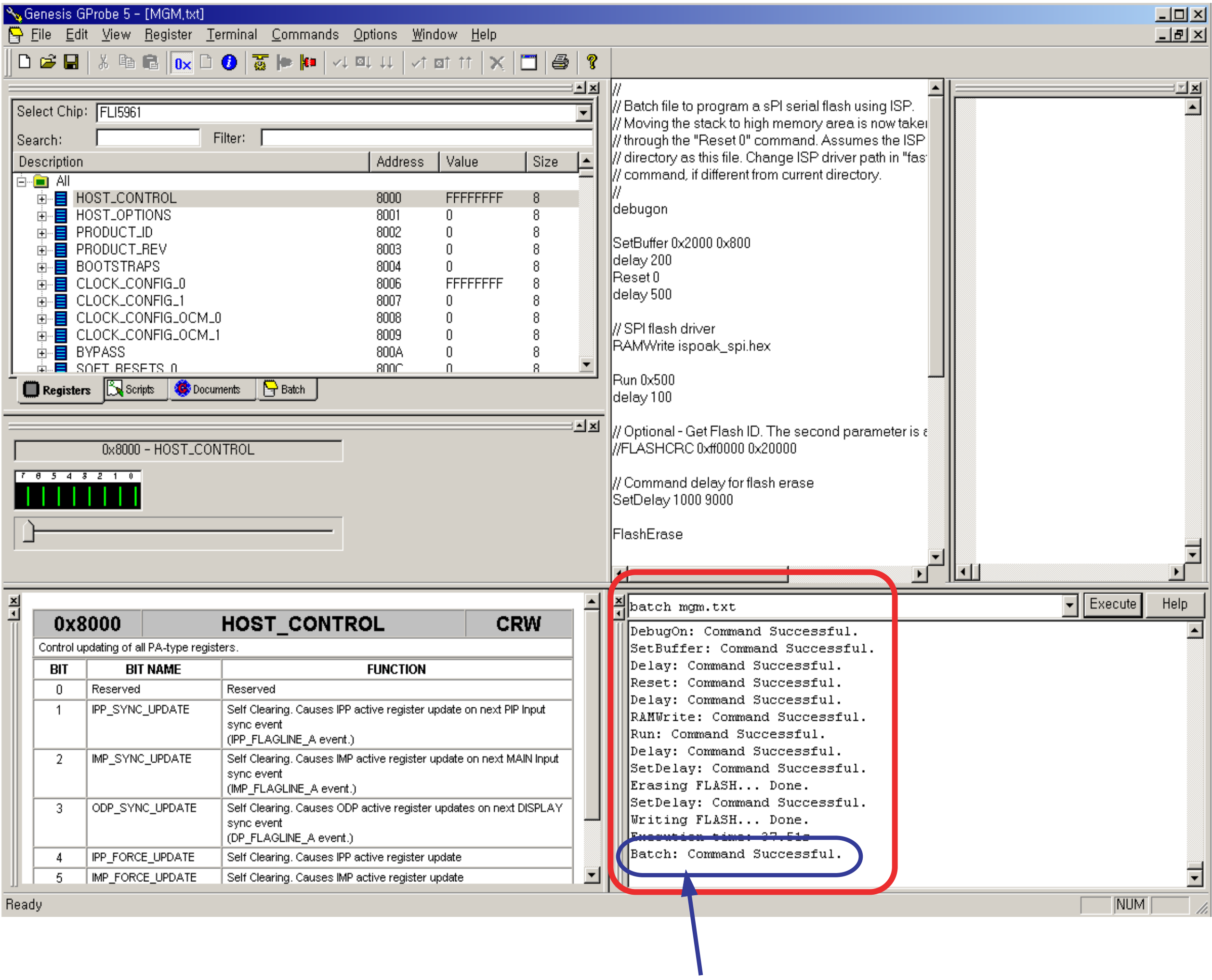
// Optional - Get CRC of 128 kByte flash. For other sizes, change second parameter
// accordingly
//FLASHCRC 0x80000 0x20000
// to reset the monitor after programming the flash using DDC2BI ONLY:
// Un-comment the following three lines (PLEASE - FOR DDC2BI PORT SELECTED ONLY)
//0x8000=1
//0x8003=0
//0x8027=1
```

The Micom program is to be copied to the folder marked in red and the name of the program is to be the same as the file name marked in blue.
(If the Micom program is not in the folder marked in red, change the path to the folder which includes the Micom program and then save the file.)

3. When completing all the procedures above, connect the Jig and the PCB, and run the G-Probe program. After that
Enter 'test 10' as shown in the following figure and press Enter or click the Execute button.
If the result appears as shown in the following figure, it is properly connected.



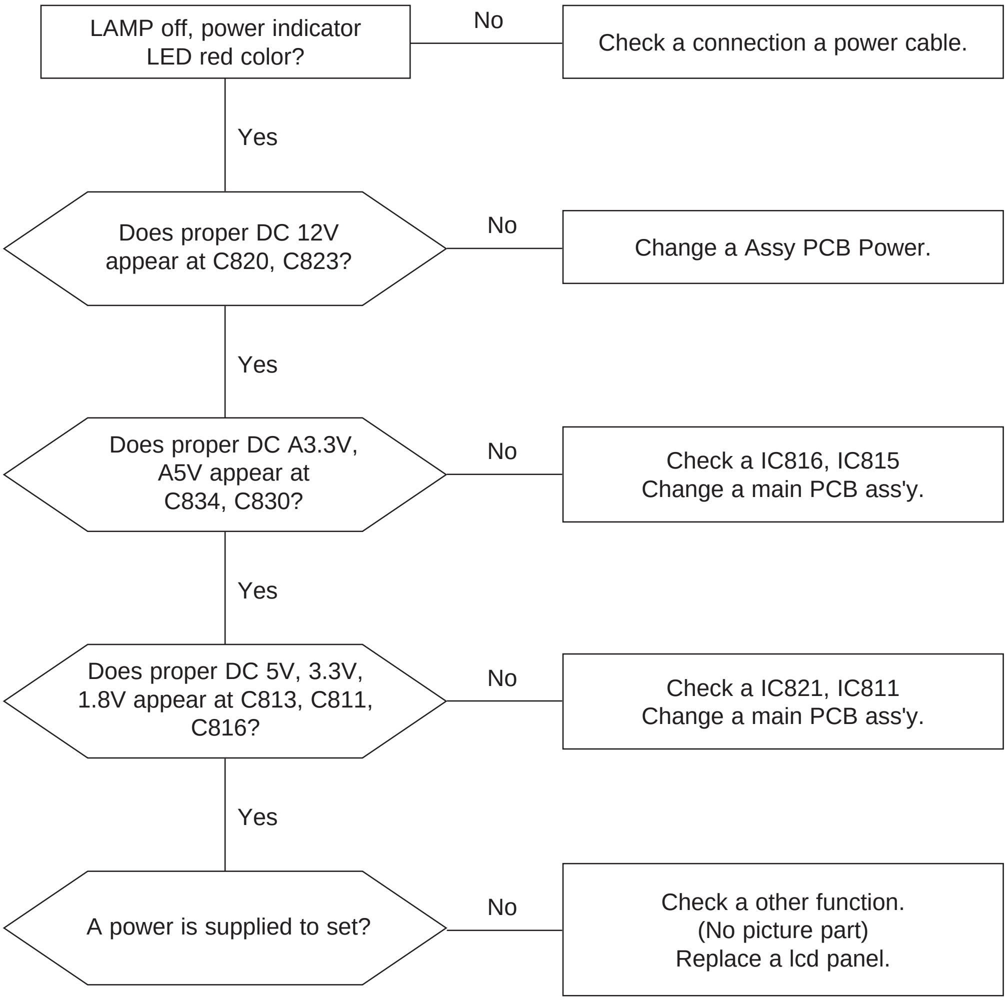
4. Enter 'batch mgm.txt' as show in the following figure and press Enter or click the Execute button to update Micom.



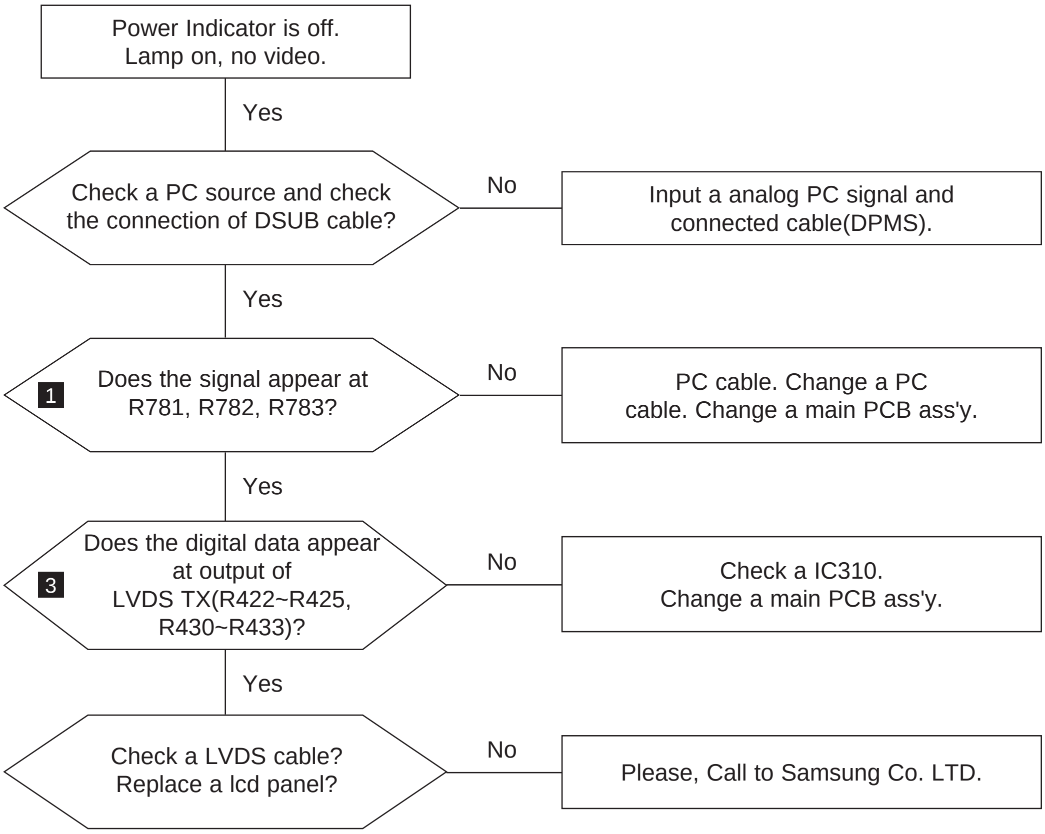
If the MICOM update is successfully completed, the above message appears.

4 Troubleshooting

4-1 No Power

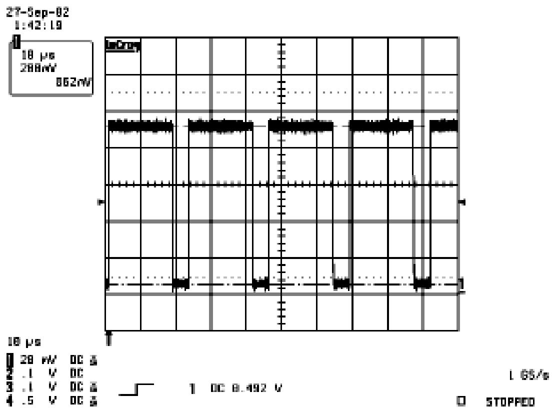


4-2 No Video (Analog PC Signal)

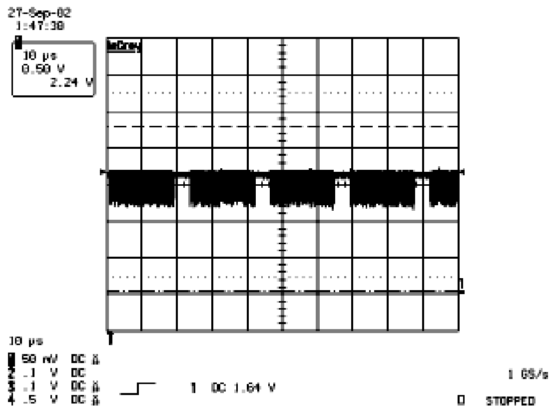


WAVEFORMS

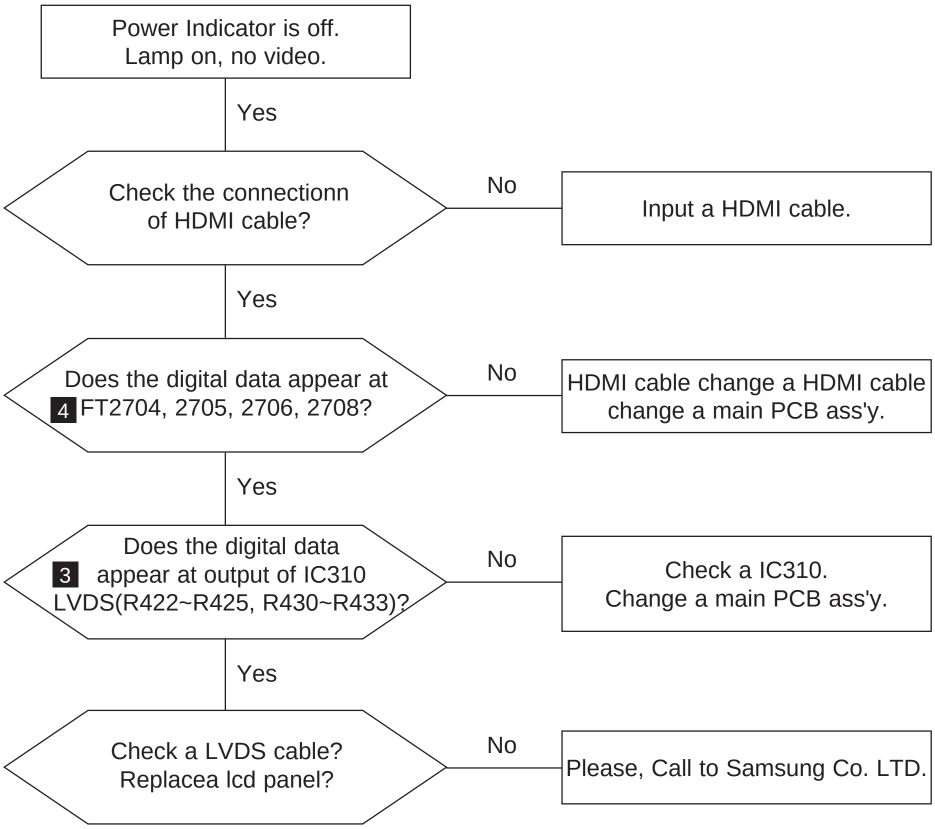
1 R,G,B Output Signal



3 Digital Output Data of IC310

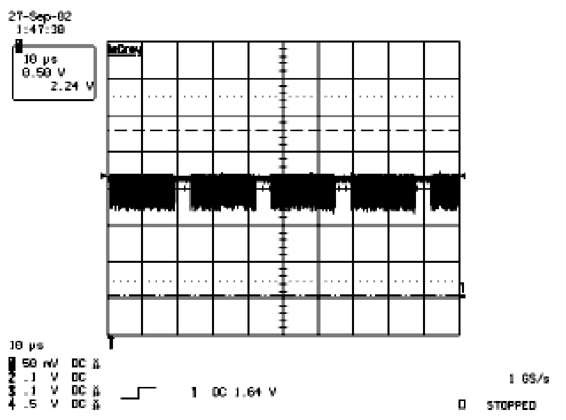


4-3 No Video (DVI-Digital Signal)

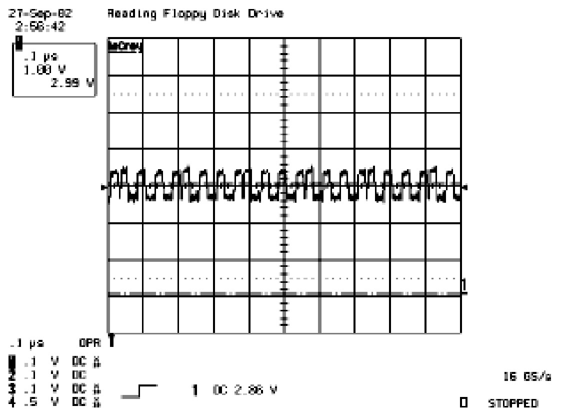


WAVEFORMS

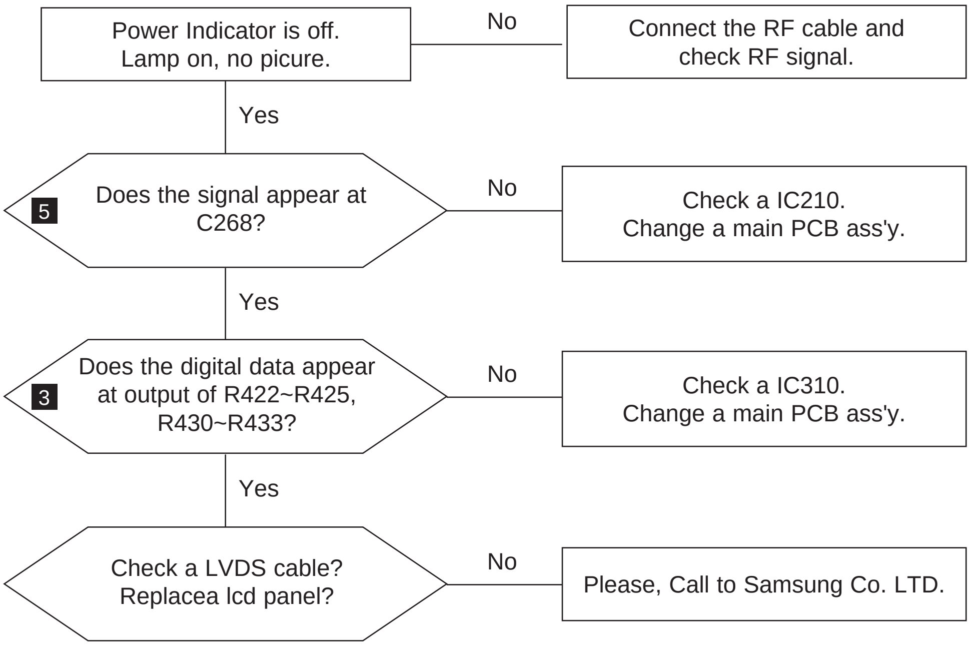
3 Digital Output Data of IC310



4 Signal of DVI(Data)

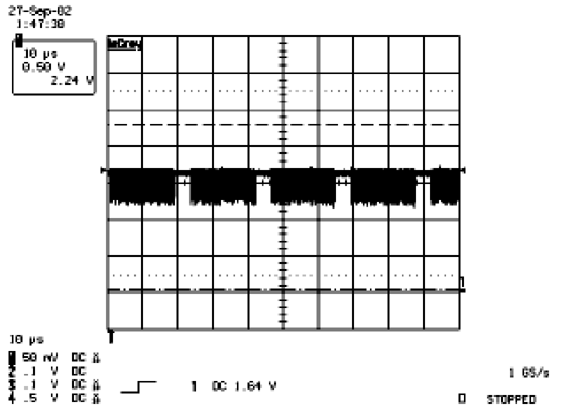


4-4 No Picture (Tuner_CVBS)

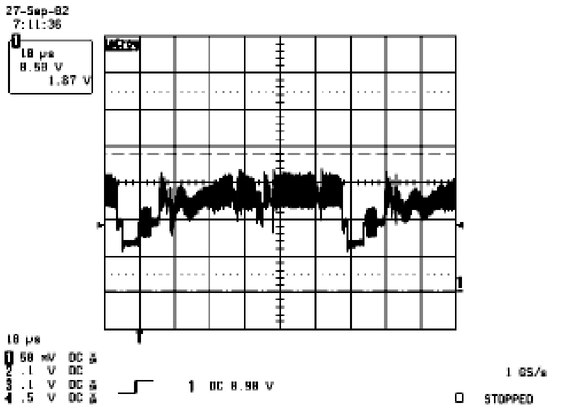


WAVEFORMS

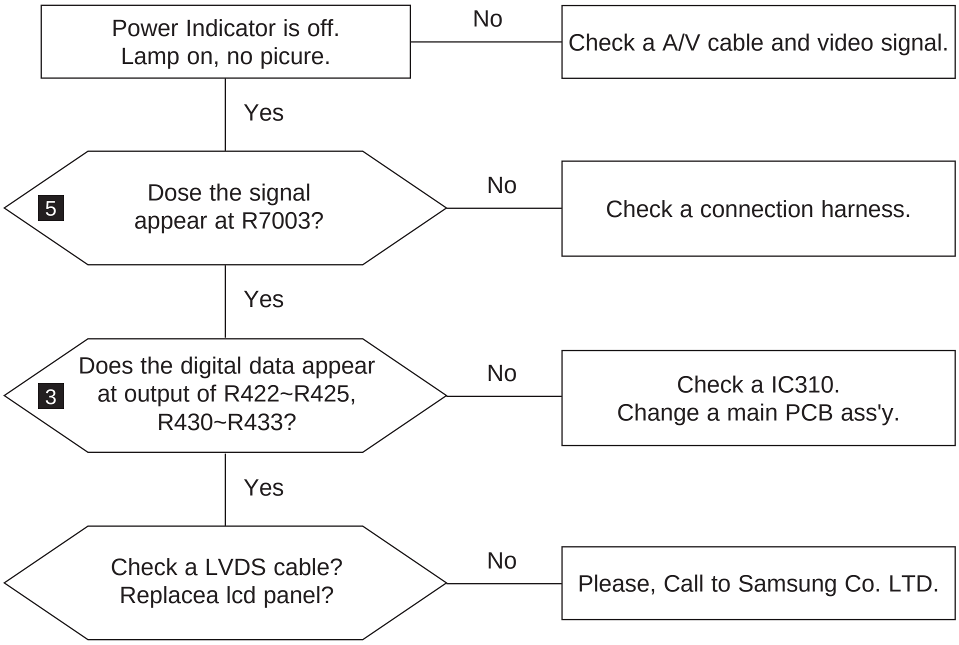
3 Digital Output Data of IC310



5 Tuner_CVBS Output Signal

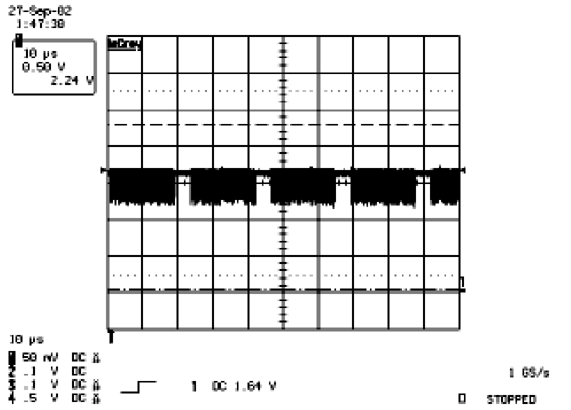


4-5 No Picture (Video_CVBS)

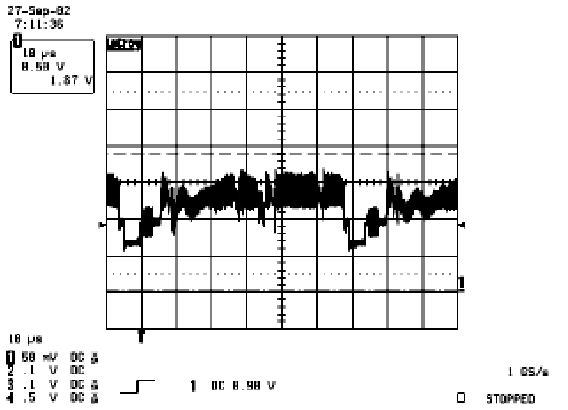


WAVEFORMS

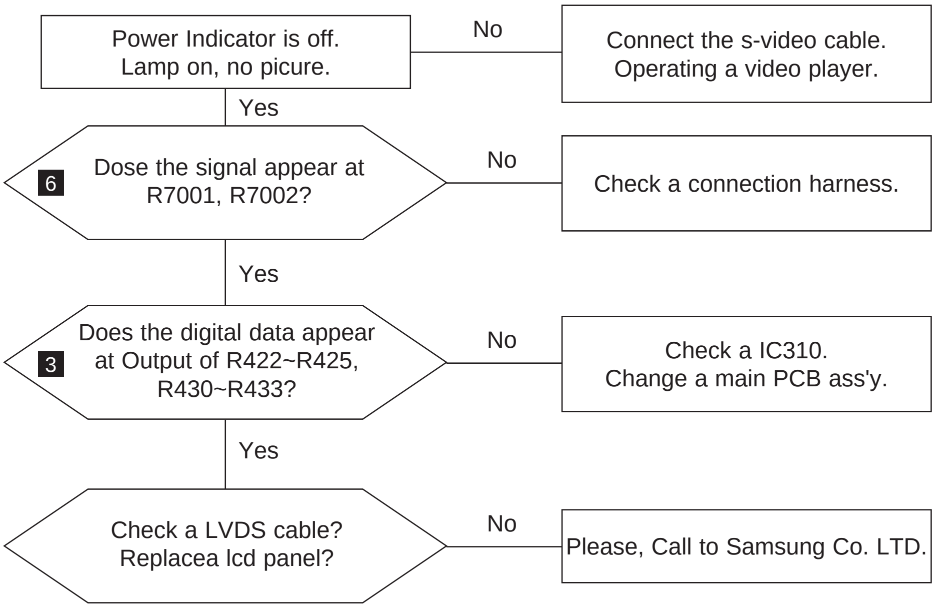
3 Digital Output Data of IC310



5 Tuner_CVBS Output Signal

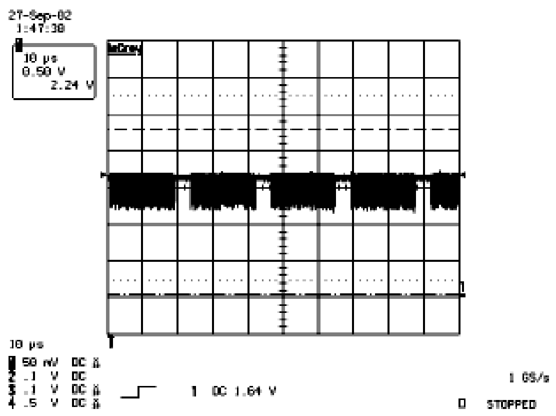


4-6 No Picture (S-VIDEO_Y,C)

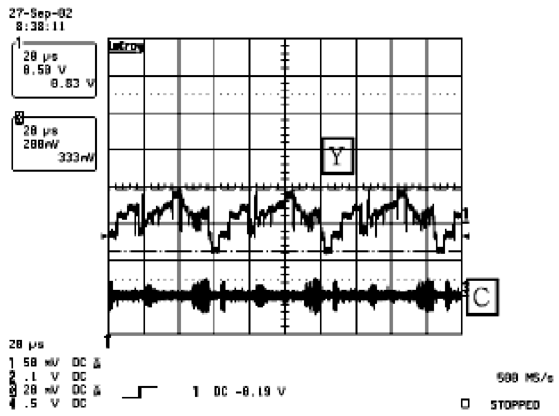


WAVEFORMS

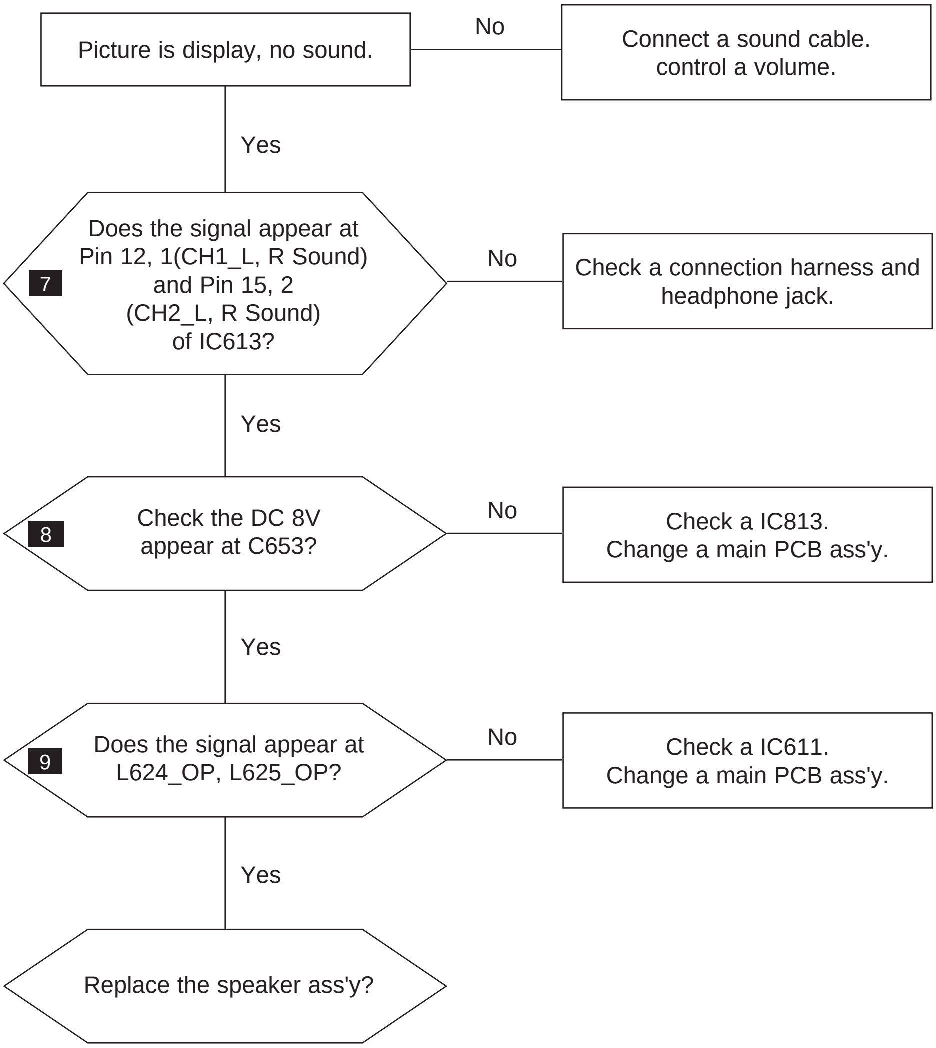
3 Digital Output Data of IC310



6 Analog Signal(Y,C)

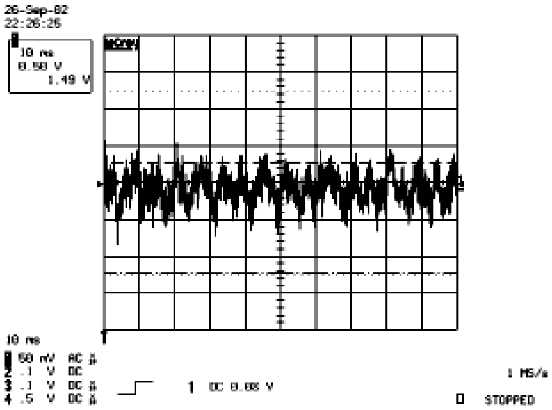


4-7 No Sound

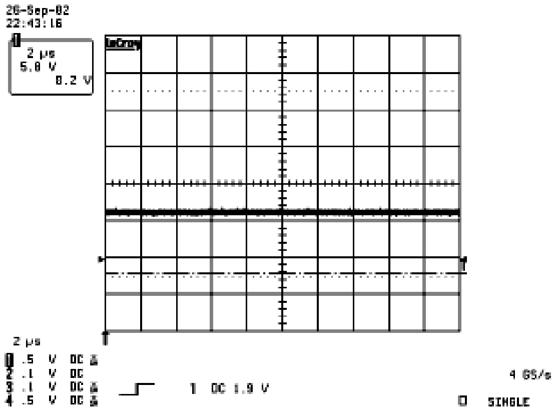

Picture is display, no sound.
No
Connect a sound cable.
control a volume.
Yes
7
Does the signal appear at
Pin 12, 1(CH1_L, R Sound)
and Pin 15, 2
(CH2_L, R Sound)
of IC613?
No
Check a connection harness and
headphone jack.
Yes
8
Check the DC 8V
appear at C653?
No
Check a IC813.
Change a main PCB ass'y.
Yes
9
Does the signal appear at
L624_OP, L625_OP?
No
Check a IC611.
Change a main PCB ass'y.
Yes
Replace the speaker ass'y?

WAVEFORMS

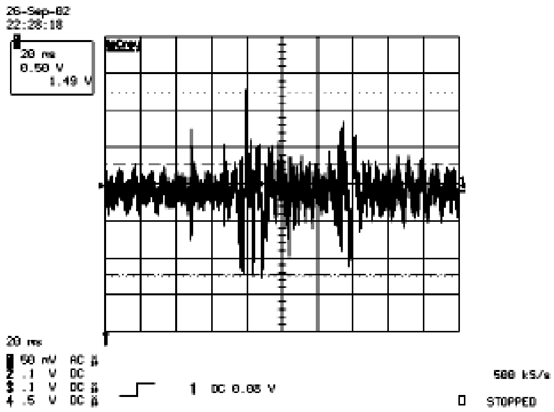
7 The Signal are Inputed to IC610



8 DC +8V



9 Output WaveForm

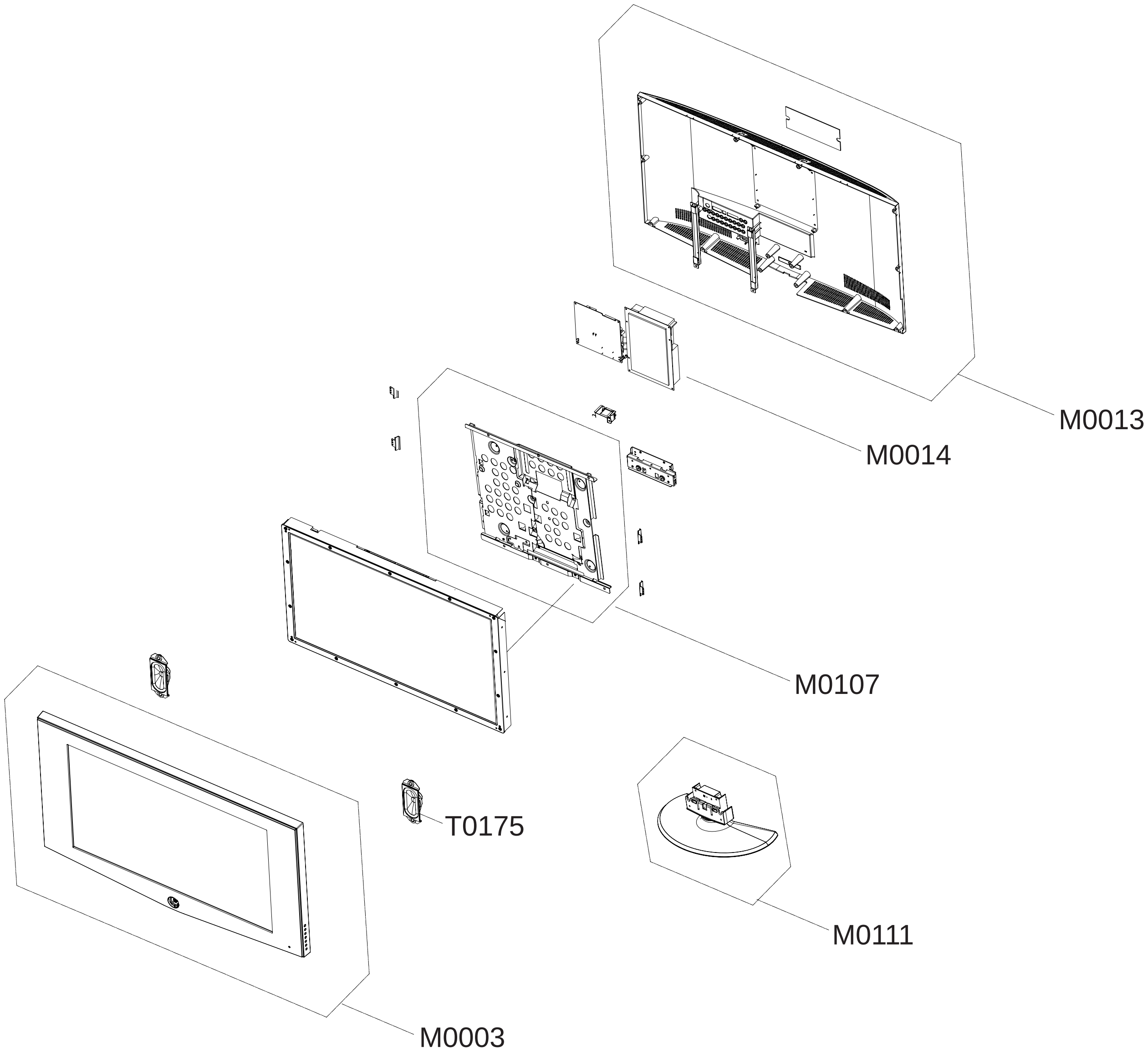


Memo

5 Exploded View and Parts List

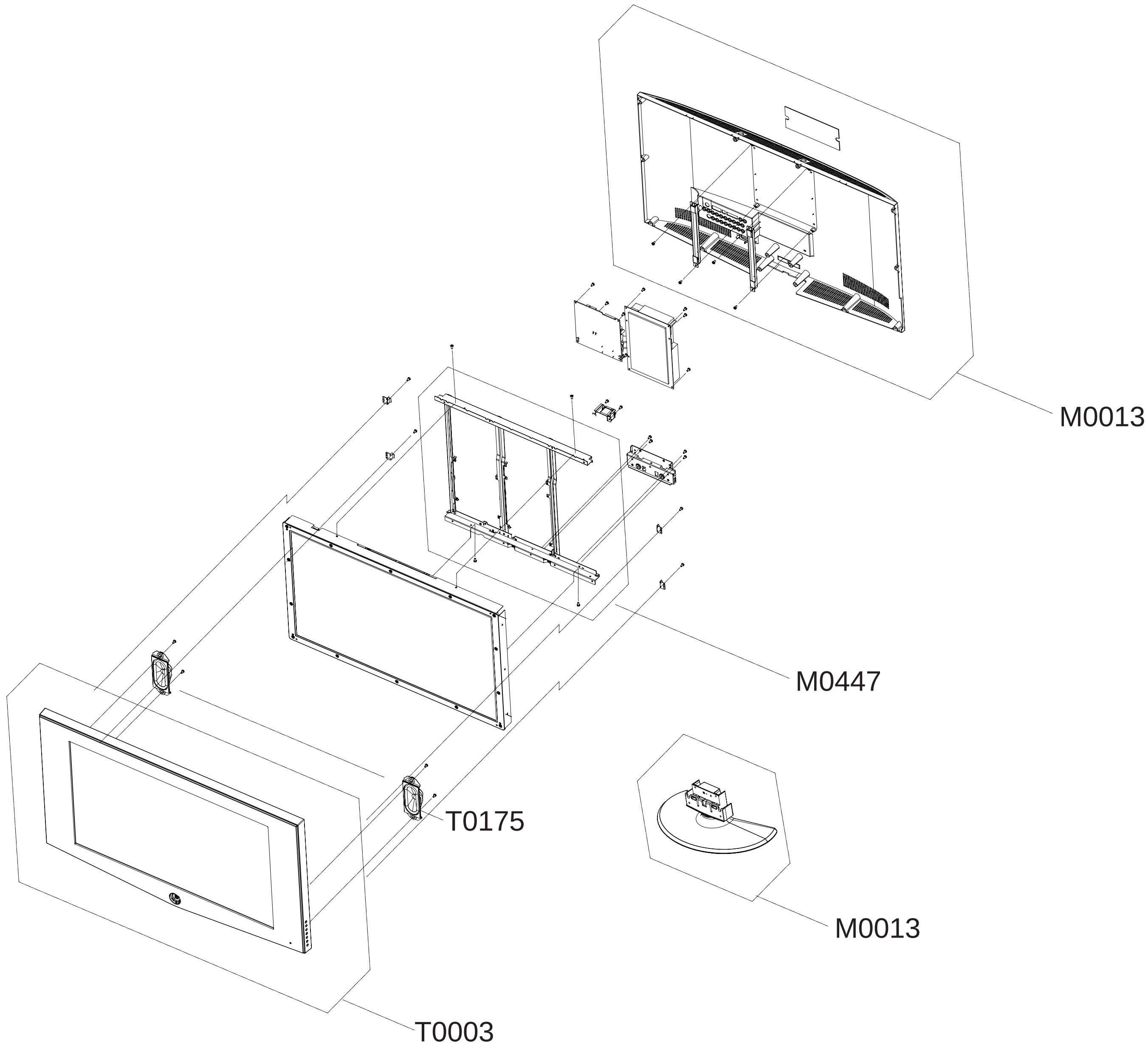
- You can search for updated part codes through ITSELF web site.
  URL : http://itself.sec.samsung.co.kr/

5-1 LE23T51B



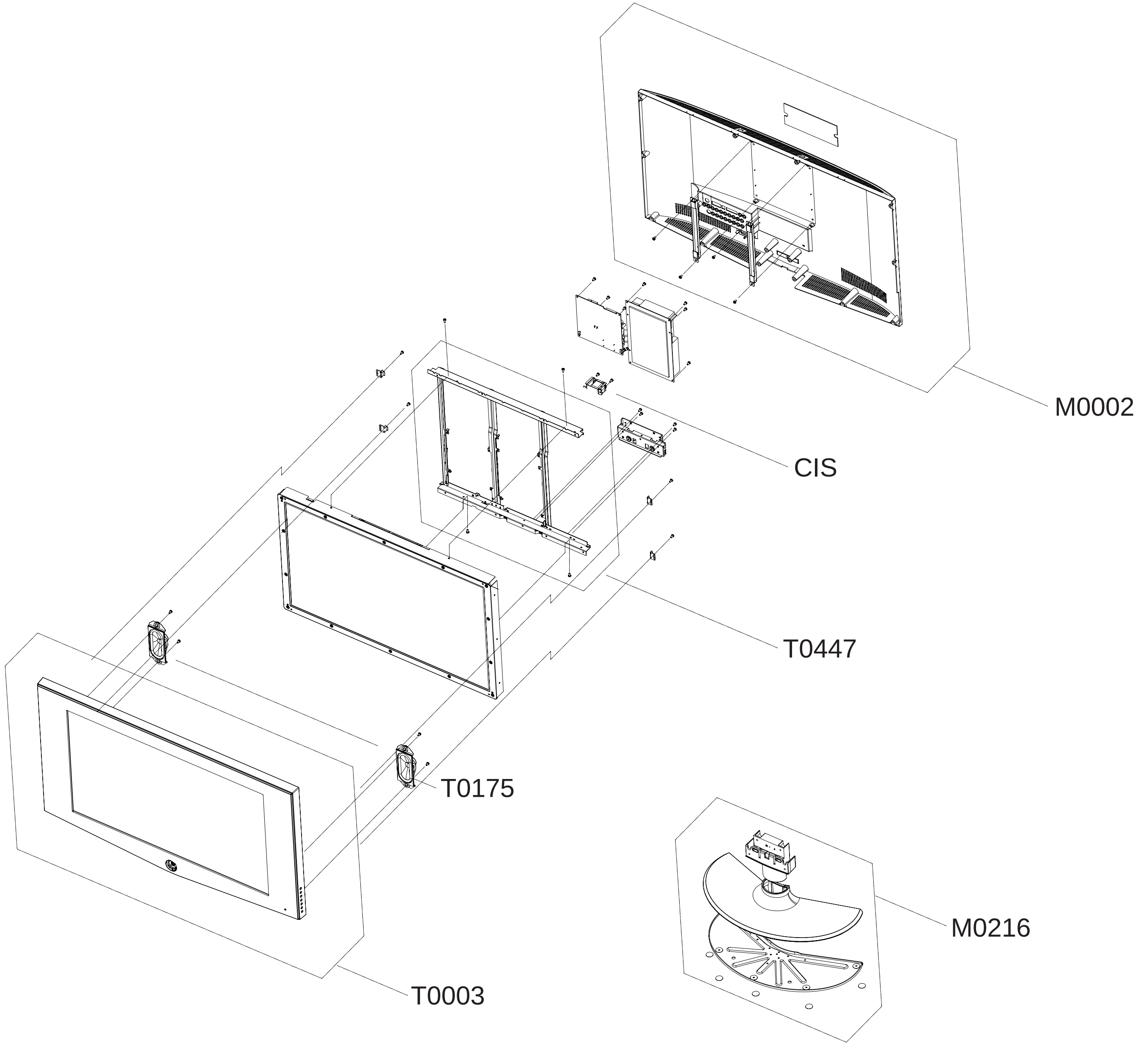
Location.No	CODE-NO	SPECIFICATION & DESCRIPTION	Q'TY	REMARK
T0003	BN96-02645B	ASSY COVER P-FRONT;23T50,HIPS,HB,BK07,BK	1	SNA
T0175	BN96-02587A	ASSY SPEAKER P;16OHM,TORINO 23,RIGHT,5W	1	SNA
M0107	BN61-02065A	BRACKET-PCB;23" MGM,SECC,T1.0	1	SNA
M0014	BN94-00752C	ASSY PCB MAIN-AMLCD;LE23T51BX/*,TORINO	1	SNA
M0013	BN96-02646B	ASSY COVER P-REAR;23T50,EO,HIPS,HB,GR503	1	SNA
M0111	BN63-01718C	COVER-STAND;TORINO,23,27,HIPS,HB,GR503,B	1	SNA

5-2 LE27T51B



Location.No	CODE-NO	SPECIFICATION & DESCRIPTION	Q'TY	REMARK
T0003	BN96-02642A	ASSY COVER P-FRONT;27T50,EO,HIPS,HB,GR50	1	SNA
T0175	BN96-02589A	ASSY SPEAKER P;16ohm,Torino 26",Right,5W	1	SNA
T0447	BN96-02640A	ASSY BRACKET P-PANEL;TORINO 27,SECC	1	SNA
M0013	BN96-02641A	ASSY COVER P-REAR;27T50,EO,HIPS,HB,GR503	1	SNA
M0013	BN96-02639A	ASSY STAND P-BASE;TORINO,23,27,HIPS,HB,G	1	SNA

5-3 LE32T51B



Location.No	CODE-NO	SPECIFICATION & DESCRIPTION	Q'TY	REMARK
T0003	BN96-02625B	ASSY COVER P-FRONT;32T50,EO,HIPS,HB,GR50	1	SNA
T0175	BN96-02591A	ASSY SPEAKER P;8ohm,Torino 32",Right,10W	1	SNA
T0447	BN96-02628A	ASSY BRACKET P-PANEL;TORINO 32",SECC	1	SNA
CIS	BN39-00693A	CBF HARNESS-IN-LET;TORINO,1617#22,3P,1P,	1	
M0002	BN90-00786B	ASSY COVER REAR;TORINO,32EO,32T50	1	SNA
M0216	BN90-00787A	ASSY STAND;TORINO,32,32T50	1	SNA

6 Electrical Parts List

-You can search for updated part codes through ITSELF web site.
URL : http://itself.sec.samsung.co.kr/

6-1 LE23T51BX/XEU Parts list

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
0		LE23T51BX/XEU	LE23T51B,Q54B/23T50-GTR,23,LCD-TV,UNITED	0	
1	M0001	BN90-00791B	ASSY COVER FRONT;TORINO,23EO,23T50	1	SNA
..2	M0081	6006-001096	SCREW-TAPTITE;WP,BH,+,M4.0,L12,BLK,SWRCH	4	SNA
..2	T0175	BN96-02586A	ASSY SPEAKER P;16OHM,TORINO 23,LEFT,5W	1	SA
..2	T0003	BN96-02645B	ASSY COVER P-FRONT;23T50,EO,HIPS,HB,BK50	1	SA
...3	M0081	6003-001003	SCREW-TAPTITE;BH,+,B,M4,L12,ZPC(BLK),SWR	2	SNA
...3	M0081	6003-001003	SCREW-TAPTITE;BH,+,B,M4,L12,ZPC(BLK),SWR	2	SNA
...3	T0060	BN61-01655A	SPRING ETC;STS-304 SUS,D8,L12,T0.5	1	SA
...3	T0023	BN64-00342A	KNOB POWER;ROME,40,PC+ABS,VIOLET	1	SNA
...3	T0071	BN64-00366A	INDICATOR-LED;ROME-I,PC,CLEAR,ALL MODEL	1	SNA
...3		BN64-00413A	KNOB-DECORATION;MGM,ABS,V0,GR70,SV012P	1	SNA
...3	T0022	BN64-00416A	KNOB CONTROL;MGM,ABS,V0,BK500	1	SNA
...3	T0014	BN67-00078A	LENS-IR;VENUS32",ACRYL,CLEAR,VENUS32"	1	SNA
...3	M0112	BN63-02201B	COVER-FRONT;23T50,EO,HIPS,HB,BK500,BKN-1	1	SNA
...3	M0162	6502-001067	CABLE CLAMP;DAFC-1300,ID2.2,T5.2,NYLIN6/	1	SNA
...3	T0069	AA60-00091K	SPACER-FELT;-,FELT,330X10,-,-,BLK,T0.35,	2	SNA
...3	M0114	AA61-20129A	HOLDER-WIRE;-,NYLON-66,-,-,-,NTR,DAFC-25	1	SNA
...3	M0145	BN96-02626C	ASSY BOARD P-FUNCTION;TORINO-23,SJ05-01-	1	SA
..2	T0175	BN96-02589A	ASSY SPEAKER P;16ohm,Torino 26",Right,5W	1	SA
1	M0002	BN90-00792B	ASSY COVER REAR;TORINO,23EO,23T50	1	SNA
..2	T0081	6002-001294	SCREW-TAPPING;BH,+,,M4,L16,ZPC(BLK)	9	SA
..2	M0013	BN96-02646B	ASSY COVER P-REAR;23T50,EO,HIPS,HB,GR503	1	SA
...3	M0081	6003-001003	SCREW-TAPTITE;BH,+,B,M4,L12,ZPC(BLK),SWR	4	SNA
...3	T0064	AA65-00003A	CLAMPER CORE;SIR-T100,PE BLACK	1	SNA
...3	T0101	BN61-02058A	BRACKET-WALL;23,27,MGM,SECC,T1.6	2	SNA
...3		BN64-00415A	INLAY-JACK;MGM,PS,SHEET,T0.3,PAL	1	SNA
...3	M0006	BN63-02295A	COVER-REAR;23T50,HIPS,HB,GR503,SESK,(PAL	1	SNA
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,B,M3,L6,ZPC(BLK),SWRC	2	SNA
1	M0216	BN90-00793A	ASSY STAND;TORINO,23,23T50	1	SNA
..2	T0524	6902-000561	BAG PE;HDPE+NITRON(DOUBLE),T0.015+T0.5,W	1	SNA
..2	M0013	BN96-02639A	ASSY STAND P-BASE;TORINO,23,27,HIPS,HB,G	1	SA
...3	T0081	6002-001294	SCREW-TAPPING;BH,+,,M4,L16,ZPC(BLK)	4	SA
...3	M0081	6003-001239	SCREW-TAPTITE;FH,+,B,M4,L10,ZPC(YEL),SWR	3	SA
...3		BN61-01562A	BRACKET-STAND BOTTOM;26,ROME,SECC,T2.0	1	SNA
...3		BN61-02054A	GUIDE-STAND;TORINO,23,27,HIPS,HB,GR503	1	SNA
...3	M0111	BN63-01718C	COVER-STAND;TORINO,23,27,HIPS,HB,GR503,D	1	SNA
...3	T0132	BN73-00052A	RUBBER FOOT;ARES 17,SILICON,DIA 17 * T1.	5	SNA
1	T0852	BN91-00833C	ASSY LCD-SPZ;RE23UO*AM LCD	1	SNA
..2	M0019	BN07-00184A	LCD;LTA230W1-L02,8bit,546*318*46.3,16.7M	1	SA
1	M0017	BN91-00946C	ASSY CHASSIS;LE23T51BX/*,TORINO	1	SNA
..2	M0014	BN94-00752C	ASSY PCB MAIN-AMLCD;LE23T51BX/*,TORINO	1	SA
...3	T0245	0202-001366	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb,	0.01	SNA
...3	FT230	2904-001179	FILTER-SAW;36.125MHz,-,32.65-39.6MHz/0.5	1	SA
...3	JA719	3701-001292	CONNECTOR-DVI;24P,3R,FEMALE,STRAIGHT,AU1	1	SA
...3	JA722	3701-001294	CONNECTOR-DSUB;15P,3R,FEMALE,STRAIGHT,AU	1	SA
...3	CN815	3711-004484	HEADER-BOARD TO CABLE;BOX,5P,1R,2mm,STRA	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
...3	CN801	3711-005942	HEADER-BOARD TO CABLE;BOX,16P,1R,2mm,STR	1	SA
...3	JA710_EU	3722-000498	JACK-SCART;21P,-,SN,BLK,NO	1	SA
...3	JA711_EU	3722-000498	JACK-SCART;21P,-,SN,BLK,NO	1	SA
...3	JA723	3722-001061	JACK-PHONE;1P,3.6PI,AG,BLK,N	1	SA
...3	JA717	3722-001734	JACK-VHS;4P,-,SN,BLK,-	1	SA
...3	JA715_EU	3722-001903	JACK-PIN;2P,-,AU,WHT/RED,-	1	SA
...3	JA721	3722-001903	JACK-PIN;2P,-,AU,WHT/RED,-	1	SA
...3	JA714_EU	3722-001938	JACK-PIN;3P,-,AU,GRN/BLU/RED,-	1	SA
...3	JA718	3722-002063	JACK-PIN;3P,AU,YEL/WHT/RED,STRAIGHT	1	SA
...3	CIS3	BN40-00072A	TUNER;TECH0949PG46A(S),TECH0949PG46A(S),	1	SA
...3		BN97-00658C	ASSY SMD-AMLCD;LE23T51BX/*,TORINO	1	SNA
....4	CIS5	0202-001375	SOLDER-CREAM;RMA-20-21L,S63,-,Sn63/Pb36.	8.48	SNA
....4	D120	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D210	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D211	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D212	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D213	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D214	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D215	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D216	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D217	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D218	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D219	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D220	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D221	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D222	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D316	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D317	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D318	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D612	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D613	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D614	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D615	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D616	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D617	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D618	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D619	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D621	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D710_EU	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D711	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D712_EU	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D713_EU	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D714_EU	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D715	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7719	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7720	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7721	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7722	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7723	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7724	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7725	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7726	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7727	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7730	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7731	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7733	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7734	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	D7740	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7741	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7742	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D7743	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D910	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D911	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D912	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D913	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200MA,SO	1	SA
....4	D800	0402-000553	DIODE-RECTIFIER;SS24,40V,2.0A,DO-214AA	1	SA
....4	D917	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225MW,SOT-2	1	SA
....4	D718_EU	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D7728	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D7729	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D7735	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D7736	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D7737	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D7738	0403-000620	DIODE-ZENER;RLZ5.6B,5.45-5.73V,500MW,LL-	1	SA
....4	D121	0403-001425	DIODE-ZENER;BZX84C33,31-35V,350MW,SOT-23	1	SA
....4	D314	0407-000123	DIODE-ARRAY;DAN202K,80V,100MA,CA2-3,SOT-	1	SA
....4	D319	0407-000123	DIODE-ARRAY;DAN202K,80V,100MA,CA2-3,SOT-	1	SA
....4	D610	0407-000123	DIODE-ARRAY;DAN202K,80V,100MA,CA2-3,SOT-	1	SA
....4	Q211	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	1	SA
....4	Q213	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	1	SA
....4	Q611	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	1	SA
....4	Q934	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	1	SA
....4	Q101	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q110_EU	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q111	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q212	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q214	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q310	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q420	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q421	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q612	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q613	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q614	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q711	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q803	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q908	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q910	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q932	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q409	0505-000110	FET-SILICON;2N7002,N,60V,115mA,7.5ohm,0.	1	SA
....4	Q409	0505-000110	FET-SILICON;2N7002,N,60V,115mA,7.5ohm,0.	1	SA
....4	Q409	0505-001170	FET-SILICON;SI9933ADY-T1,P,-20V,3.4A,0.0	1	SA
....4	Q409	0505-001170	FET-SILICON;SI9933ADY-T1,P,-20V,3.4A,0.0	1	SA
....4	IC104	0801-002267	IC-CMOS LOGIC;74LCX14,-,SOIC,14P,150MIL,	1	SA
....4	IC105	0909-001036	IC-REAL TIME CLOCK;DS1337S+T&R,-,SO,8P,1	1	SA
....4	IC613	1001-000164	IC-ANALOG MULTIPLEX;74HC4052,CMOS,SOP,16	1	SA
....4	IC310	1003-001857	IC-CRT CONTROLLER;FLI5921H-LF,PQFP,208P,	1	SA
....4	IC112	1103-000129	IC-EEPROM;24C02,256x8,SOP,8P,5x4mm,4.5/5	1	SA
....4	IC112	1103-000129	IC-EEPROM;24C02,256x8,SOP,8P,5x4mm,4.5/5	1	SA
....4	IC112	1103-001279	IC-EEPROM;24C32,4Kx8,SOP,8P,5x4mm,2.5/5.	1	SA
....4	IC112	1103-001314	IC-EEPROM;24C16,2Kx8,SOP,8P,5x4mm,2.7/5.	1	SA
....4	IC113	1105-001284	IC-DRAM;636165,1Mx16Bit,TSOP,50P,467MIL,	1	SNA
....4	IC113	1105-001284	IC-DRAM;636165,1Mx16Bit,TSOP,50P,467MIL,	1	SNA
....4	DU410	1201-000166	IC-OP AMP;LM358,SOP,ST,8P,150MIL,DUAL,10	1	SA
....4	T0085	1201-002136	IC-AUDIO AMP;LM4810,MSOP,8P,3x3mm,DUAL,-	1	SA

7-2 Others

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	T0085	1201-002274	IC-AUDIO AMP;TPA3008D2,HTQFP,48P,7x7mm,D	1	SA
....4	T0087	1203-001816	IC-POSI.FIXED REG.;78M08,TO-252,3P,-,PLA	1	SA
....4	IC416	1203-001824	IC-VOL. DETECTOR;7042,SOT-89,3P,-,PLASTI	1	SA
....4	T0087	1203-002842	IC-POSI.FIXED REG.;AP1117D-33A,TO-252,3P	1	SA
....4	T0087	1203-002844	IC-POSI.FIXED REG.;AP1117D-18A,TO-252-3L	1	SA
....4	T0087	1203-002844	IC-POSI.FIXED REG.;AP1117D-18A,TO-252-3L	1	SA
....4	T0087	1203-002855	IC-POSI.FIXED REG.;MC33269DTRK-5.0,DPRK,	1	SA
....4	T0170	1203-003059	IC-SWITCH VOL. REG.;MP1583,SOIC,8P,4.9x3	1	SA
....4	R225	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R226	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R257	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R258	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R261	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R262	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R320	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R321	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R341	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R343	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R344	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R355	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R356	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R612	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R816	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	C375	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	C377	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	C378	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R101	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R111	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R112	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R125	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R201	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R213	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R214	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R215	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R219	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R222	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R251	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R252	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R275	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R322	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R323	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R324	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R325	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R329	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R330	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R333	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R335	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R336	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R337	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R358	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R360_EU	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R361_EU	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R362_EU	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R411	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R440	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R614	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R615	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	R634	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R635	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R750_EU	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R859	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R9665	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R9720	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R9721	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R9722	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R7004	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7005	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7006	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7007	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7008	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7009	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7010	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R7011	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R716_EU	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R717_EU	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R718_EU	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R765	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R766	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R790	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R795	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R231	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R761	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R762	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R775	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R777	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R789	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R791	2007-000072	R-CHIP;47ohm,5%,1/10W,TP,1608	1	SA
....4	R113	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R114	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R210	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R211	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R254	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R255	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R256	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R351	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R420	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R434	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R435	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R455	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R457	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R458	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R648	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R649	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R701_EU	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R709	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R714_EU	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R720_EU	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R743	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R758	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R767	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R773	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R794	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R936	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R937	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	R9703	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R328	2007-000075	R-CHIP;220ohm,5%,1/10W,TP,1608	1	SA
....4	R439	2007-000075	R-CHIP;220ohm,5%,1/10W,TP,1608	1	SA
....4	R126	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R232	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R366	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R712_EU	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R713_EU	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R732_EU	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R734_EU	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	1	SA
....4	R266	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R271	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R417	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R728	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R729	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R733_EU	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R735_EU	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R754_EU	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R755_EU	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R768	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R769	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R774	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R776	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R798	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R799	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R901	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
....4	R218	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R224	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R326	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R327	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R345	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R413	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R419	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R463	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R645	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R646	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R778	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R779	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R917	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R9716	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA
....4	R9696	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	SA
....4	R9697	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	SA
....4	R263	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R264	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R414	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R416	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R418	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R9701	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R9702	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R110	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R212	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R220	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R259	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R310	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R311	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R346	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R365	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	R415	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R647	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R650	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R660	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R661	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R662	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R705	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R803	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R804	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R805	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R812	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R813	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R820	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R821	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R913	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R920	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R9699	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R9700	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R9706	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R9714	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R9717	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R216	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	SA
....4	R217	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	SA
....4	R622	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	SA
....4	R625	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	SA
....4	R719_EU	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	SA
....4	R739_EU	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	SA
....4	R230	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R269	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R274	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R302	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R421	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R443	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R445	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R447	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R449	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R456	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R460	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R462	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R706	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R759	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R760	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R772	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R787	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R788	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R811	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R814	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R9710	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R9711	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R9712	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R9715	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	SA
....4	R815	2007-000092	R-CHIP;15Kohm,5%,1/10W,TP,1608	1	SA
....4	R613	2007-000093	R-CHIP;20Kohm,5%,1/10W,TP,1608	1	SA
....4	R618	2007-000093	R-CHIP;20Kohm,5%,1/10W,TP,1608	1	SA
....4	R124	2007-000094	R-CHIP;22Kohm,5%,1/10W,TP,1608	1	SA
....4	R670	2007-000094	R-CHIP;22Kohm,5%,1/10W,TP,1608	1	SA
....4	R671	2007-000094	R-CHIP;22Kohm,5%,1/10W,TP,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	R710_EU	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	SA
....4	R711_EU	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	SA
....4	R819	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	SA
....4	R894	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	SA
....4	R637	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R638	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R639	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R640	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R641	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R642	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R643	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R644	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R651	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R652	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R653	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R654	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R655	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R656	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R657	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R658	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R119	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	SA
....4	R127	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	SA
....4	R611	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	SA
....4	R619	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	SA
....4	R810	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	SA
....4	R629	2007-000103	R-CHIP;120Kohm,5%,1/10W,TP,1608	1	SA
....4	R620	2007-000106	R-CHIP;220Kohm,5%,1/10W,TP,1608	1	SA
....4	R817	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608	1	SA
....4	R910	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608	1	SA
....4	R911	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608	1	SA
....4	R912	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608	1	SA
....4	R626	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608	1	SA
....4	R627	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608	1	SA
....4	R7001	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7002	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7003	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7012	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7013	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7014	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7015	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7016	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R7017	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R727_EU	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R738	2007-000293	R-CHIP;100ohm,5%,1/4W,TP,3216	1	SA
....4	R229	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R796	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R797	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R117_EU	2007-000402	R-CHIP;150ohm,5%,1/10W,TP,1608	1	SA
....4	R267	2007-000402	R-CHIP;150ohm,5%,1/10W,TP,1608	1	SA
....4	R272	2007-000402	R-CHIP;150ohm,5%,1/10W,TP,1608	1	SA
....4	R265	2007-000458	R-CHIP;18Kohm,5%,1/10W,TP,1608	1	SA
....4	R270	2007-000458	R-CHIP;18Kohm,5%,1/10W,TP,1608	1	SA
....4	R715_EU	2007-000458	R-CHIP;18Kohm,5%,1/10W,TP,1608	1	SA
....4	R736_EU	2007-000458	R-CHIP;18Kohm,5%,1/10W,TP,1608	1	SA
....4	R412	2007-000608	R-CHIP;240ohm,5%,1/10W,TP,1608	1	SA
....4	R438	2007-000903	R-CHIP;430ohm,1%,1/10W,TP,1608	1	SA
....4	R122_EU	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	R771	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608	1	SA
....4	R338	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R339	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R340	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R780	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R781	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R782	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R783	2007-001042	R-CHIP;56ohm,1%,1/10W,TP,1608	1	SA
....4	R818	2007-001068	R-CHIP;6.8Kohm,1%,1/10W,TP,1608	1	SA
....4	R721_EU	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R722	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R723	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R724	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R725_EU	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R726_EU	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R737_EU	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R744	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R751	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R752	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R753	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R763	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R764	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R770	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	SA
....4	R331	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R348	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R349	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R353	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R784	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R785	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R786	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R792	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	R793	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	SA
....4	RA210	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA211	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	C213	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C220	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C223	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C227	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C230	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C233	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C236	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C119	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C201	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C214	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C248	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C250	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C251	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C252	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C253	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C255	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C259	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C260	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C261	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C262	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C263	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C264	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C265	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA

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....4	C266	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C271	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C616	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C622	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C627	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C637	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C642	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C643	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C702	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C734	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C812	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C818	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C823	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C827	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C841	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C880	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C901	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C912	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C925	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C926	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C927	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C114	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C115	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C710	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C711	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C712_EU	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C713	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C714_EU	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C715_EU	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C716	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C717_EU	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C719_EU	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C721_EU	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C729	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C733	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C745	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C746	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	SA
....4	C110_EU	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C116_EU	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C117	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C118_EU	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C122	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C124	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C354	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C355	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C356	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C416	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C738	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C739	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C740	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C741	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C824	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C825	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C838	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C915	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C917	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C918	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	C850	2203-000405	C-CER,CHIP;0.18nF,5%,50V,C0G,1608	1	SA
....4	C301	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C610	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C611	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C640	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C641	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C650	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C651	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C916	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C929	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	SA
....4	C125	2203-000491	C-CER,CHIP;2.2nF,10%,50V,X7R,1608	1	SA
....4	C257	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SA
....4	C258	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SA
....4	C840	2203-000715	C-CER,CHIP;3.3nF,10%,50V,X7R,1608	1	SA
....4	C707	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C725	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C726	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C730	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C731	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C732	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C736	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C742	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C747	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C748	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	SA
....4	C722_EU	2203-000815	C-CER,CHIP;0.033nF,5%,50V,C0G,1608	1	SA
....4	C723_EU	2203-000815	C-CER,CHIP;0.033nF,5%,50V,C0G,1608	1	SA
....4	C724_EU	2203-000815	C-CER,CHIP;0.033nF,5%,50V,C0G,1608	1	SA
....4	C126	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	SA
....4	C631	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	SA
....4	C632	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	SA
....4	C743	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	SA
....4	C744	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	SA
....4	C127	2203-000972	C-CER,CHIP;47nF,10%,16V,X7R,TP,1608	1	SA
....4	C618	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	SA
....4	C621	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	SA
....4	C645	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	SA
....4	C646	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	SA
....4	C202	2203-000998	C-CER,CHIP;0.047nF,5%,50V,C0G,1608	1	SA
....4	C203	2203-000998	C-CER,CHIP;0.047nF,5%,50V,C0G,1608	1	SA
....4	C718_EU	2203-000998	C-CER,CHIP;0.047nF,5%,50V,C0G,1608	1	SA
....4	C720_EU	2203-000998	C-CER,CHIP;0.047nF,5%,50V,C0G,1608	1	SA
....4	C373	2203-001086	C-CER,CHIP;0.0050nF,0.25pF,50V,NP0,1608	1	SA
....4	C374	2203-001086	C-CER,CHIP;0.0050nF,0.25pF,50V,NP0,1608	1	SA
....4	C613	2203-001391	C-CER,CHIP;150nF,10%,25V,X7R,TP,2012,-	1	SA
....4	C615	2203-001391	C-CER,CHIP;150nF,10%,25V,X7R,TP,2012,-	1	SA
....4	C648	2203-001391	C-CER,CHIP;150nF,10%,25V,X7R,TP,2012,-	1	SA
....4	C649	2203-001391	C-CER,CHIP;150nF,10%,25V,X7R,TP,2012,-	1	SA
....4	C123	2203-001607	C-CER,CHIP;0.22nF,5%,50V,NP0,1608	1	SA
....4	C638	2203-001607	C-CER,CHIP;0.22nF,5%,50V,NP0,1608	1	SA
....4	C623	2203-001652	C-CER,CHIP;470nF,+80-20%,16V,Y5V,1608	1	SA
....4	C626	2203-001652	C-CER,CHIP;470nF,+80-20%,16V,Y5V,1608	1	SA
....4	C212	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C219	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C222	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C226	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C229	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C232	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	C235	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C628	2203-001724	C-CER,CHIP;4700nF,+80-20%,16V,Y5V,3216	1	SA
....4	C366	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C410	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C652	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C700	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C728	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C735	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C810	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C814	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C822	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C829	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C831	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C833	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C835	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C837	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C844	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C846	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C911	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	R464	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C614	2203-005030	C-CER,CHIP;470nF,+80-20%,50V,Y5V,TP,3216	1	SA
....4	C647	2203-005030	C-CER,CHIP;470nF,+80-20%,50V,Y5V,TP,3216	1	SA
....4	C113	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C211	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C218	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C221	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C225	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C228	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C231	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C234	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C239	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C254	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C311	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C312	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C313	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C314	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C315	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C316	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C317	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C318	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C320	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C321	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C322	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C323	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C325	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C326	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C327	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C328	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C329	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C330	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C331	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C333	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C334	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C335	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C336	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C337	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C340	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	C341	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C342	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C343	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C344	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C345	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C346	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C347	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C350	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C351	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C352	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C353	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C359	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C360	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C361	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C362	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C363	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C364	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C385	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C412	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C418	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C419	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C630	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C633	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C634	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C635	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C636	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C703	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C769	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C847	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C848	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C849	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C920	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C921	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C922	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C923	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C924	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C930	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C931	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C639	2203-006036	C-CER,CHIP;680NF,+80-20%,16V,Y5V,TP,1608	1	SA
....4	C678	2203-006036	C-CER,CHIP;680NF,+80-20%,16V,Y5V,TP,1608	1	SA
....4	C679	2203-006036	C-CER,CHIP;680NF,+80-20%,16V,Y5V,TP,1608	1	SA
....4	C210	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C224	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C237	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C238	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C240	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C241	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C242	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C243	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C244	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C245	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C249	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C654	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C655	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C656	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C657	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C658	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	C659	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C660	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C661	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C890	2203-006333	C-CER,CHIP;10000nF,20%,16V,X5R,TP,3216	1	SA
....4	C417	2402-000108	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.2m	1	SA
....4	C112	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C121	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C267	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C268	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C415	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C620	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C624	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C625	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C644	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C671	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C677	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C811	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C813	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C819	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C820	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C826	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C828	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C845	2402-001128	C-AL,SMD;100UF,20%,16V,WT,TP,6.3X5.7MM	1	SA
....4	C612	2402-001129	C-AL,SMD;47UF,20%,16V,WT,TP,6.3X5.2MM	1	SA
....4	C111_EU	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8m	1	SA
....4	C413	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8m	1	SA
....4	C365	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C653	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C821	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C830	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C832	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C834	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C932	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C270	2402-001222	C-AL,SMD;3.3UF,20%,50V,HR,TP,4.3X4.3X5.8	1	SA
....4	C246	2402-001226	C-AL,SMD;4.7UF,20%,35V,HR,TP,4.3X4.3X5.8	1	SA
....4	C247	2402-001226	C-AL,SMD;4.7UF,20%,35V,HR,TP,4.3X4.3X5.8	1	SA
....4	C256	2402-001226	C-AL,SMD;4.7UF,20%,35V,HR,TP,4.3X4.3X5.8	1	SA
....4	C120	2402-001238	C-AL,SMD;1uF,20%,50V,HR,TP,4.3x4.3x5.2mm	1	SA
....4	C816	2402-001257	C-AL,SMD;470uF,20%,16V,-,TP,8.3*10	1	SA
....4	T0052	2703-000185	INDUCTOR-SMD;3.3uH,10%,2012	1	SA
....4	T0052	2703-000185	INDUCTOR-SMD;3.3uH,10%,2012	1	SA
....4	T0052	2703-000185	INDUCTOR-SMD;3.3uH,10%,2012	1	SA
....4	T0052	2703-000392	INDUCTOR-SMD;10uH,5%,4532	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA

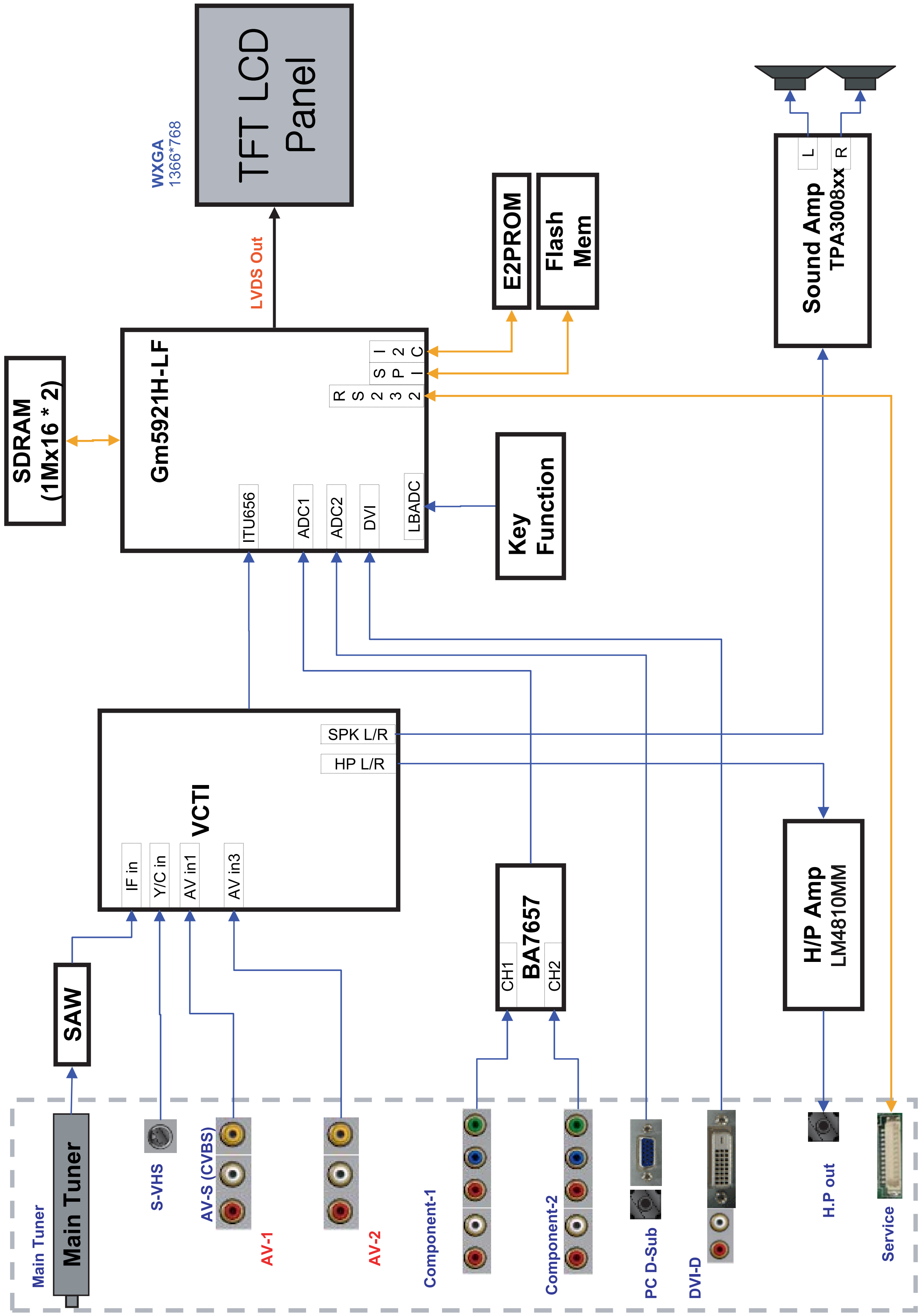
Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000417	INDUCTOR-SMD;220uH,5%,3225	1	SA
....4	T0052	2703-001426	INDUCTOR-SMD;680uH,20%,7070	1	SA
....4	T0052	2703-001778	INDUCTOR-SMD;3.3uH,20%,3225	1	SA
....4	T0052	2703-001778	INDUCTOR-SMD;3.3uH,20%,3225	1	SA
....4	T0052	2703-001778	INDUCTOR-SMD;3.3uH,20%,3225	1	SA
....4	T0052	2703-001778	INDUCTOR-SMD;3.3uH,20%,3225	1	SA
....4	T0052	2703-001778	INDUCTOR-SMD;3.3uH,20%,3225	1	SA
....4	T0052	2703-002327	INDUCTOR-SMD;3.9uH,5%,3225	1	SA
....4	X801	2801-000258	CRYSTAL-SMD;0.032768MHz,20ppm,SMD,12.5pF	1	SA
....4	X710	2801-003667	CRYSTAL-SMD;14.31818MHz,30ppm,28-AAN,16,	1	SA
....4	X800	2801-004004	CRYSTAL-SMD;20.25MHz,20ppm,28-AAN,13pF,2	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	F103	2901-001302	FILTER-EMI SMD;20V,0.3A,-,-,2.0x1.2x1.3m	1	SA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001145	BEAD-SMD;60OHM,4516,6000,TP,70OHM/45MHZ,	1	SNA
....4	T0568	3301-001236	BEAD-SMD;60ohm,1608,200mA,,,,0.7ohm	1	SNA
....4	T0568	3301-001236	BEAD-SMD;60ohm,1608,200mA,,,,0.7ohm	1	SNA
....4	T0568	3301-001236	BEAD-SMD;60ohm,1608,200mA,,,,0.7ohm	1	SNA
....4	T0568	3301-001236	BEAD-SMD;60ohm,1608,200mA,,,,0.7ohm	1	SNA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
....4	T0568	3301-001236	BEAD-SMD;60ohm,1608,200mA,,,,0.7ohm	1	SNA
....4	TEST4	3711-002046	HEADER-BOARD TO CABLE;BOX,12P,1R,1.25mm,	1	SA
....4	CN622	3711-005291	HEADER-BOARD TO CABLE;BOX,2P,1R,2MM,SMD-	1	SA
....4	CN621	3711-005292	HEADER-BOARD TO CABLE;BOX,3P,1R,2MM,SMD-	1	SA
....4	CN701	3711-005470	HEADER-BOARD TO CABLE;BOX,30P,1R,1.25mm,	1	SA
....4	CN802	3711-005497	HEADER-BOARD TO CABLE;BOX,15P,1R,1.25MM,	1	SA
....4	L805	BN27-00008A	COIL CHOKE-SMD;SMD12*12*8.5,GH15/17PS,22	1	SA
....4	L623_OP	BN27-00017A	COIL CHOKE-SMD;PO5845-330,LT17N2,33uH,10	1	SA
....4	L624_OP	BN27-00017A	COIL CHOKE-SMD;PO5845-330,LT17N2,33uH,10	1	SA
....4	L625_OP	BN27-00017A	COIL CHOKE-SMD;PO5845-330,LT17N2,33uH,10	1	SA
....4	L626_OP	BN27-00017A	COIL CHOKE-SMD;PO5845-330,LT17N2,33uH,10	1	SA
....4	M0018	BN97-00657C	ASSY MICOM;0000,20050528,1107-001500,Q55	1	SA
.....5	IC115	1107-001580	IC-FLASH MEMORY;MX25L4005,4Mbit,512Kx8Bi	1	SA
....4	M0018	BN97-00657D	ASSY MICOM;,0000,20050810,BN09-00014A,Q5	1	SA
.....5	T0119	BN09-00014A	IC MICOM;VCT4973,VCT49X3F,XX,F2,144,3.3V	1	SNA
....4	C836	2409-001065	C-ORGANIC;82UF,20%,16V,WT,TP,8X6.9MM,-	1	SA
....4	D620	0403-000314	DIODE-ZENER;RLZJ9.1B,8.8-9.3V,500MW,LL-3	1	SA
....4	C701	2203-000041	C-CER,CHIP;0.01nF,0.25pF,50V,C0G,1608	1	SA
....4	C414	2203-005249	C-CER,CHIP;100nF,10%,50V,X7R,1608	1	SA
....4	C928	2203-005249	C-CER,CHIP;100nF,10%,50V,X7R,1608	1	SA
....4	C843	2409-001051	C-ORGANIC;82UF,20%,6.3V,WT,TP,6.3*5.9MM,	1	SA
....4	R116_EU	2007-000234	R-CHIP;1.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R120_EU	2007-000659	R-CHIP;27ohm,5%,1/10W,TP,1608	1	SA
....4	R123_EU	2007-000882	R-CHIP;4.7ohm,5%,1/10W,TP,1608	1	SA
....4	R121_EU	2007-001134	R-CHIP;68ohm,5%,1/10W,TP,1608	1	SA
....4	T0052	2703-000222	INDUCTOR-SMD;560nH,10%,2012	1	SA
....4	R115_OP	2007-000416	R-CHIP;15ohm,5%,1/10W,TP,1608	1	SA
....4	C382	2203-000578	C-CER,CHIP;220nF,20%,50V,Y5V,TP,3216	1	SA
....4	C384	2203-000578	C-CER,CHIP;220nF,20%,50V,Y5V,TP,3216	1	SA
....4	C387	2203-000578	C-CER,CHIP;220nF,20%,50V,Y5V,TP,3216	1	SA
....4	T0077	BN41-00636C	PCB MAIN;TORINO,FR-4,4,MP1.2,1.6,160 * 1	1	SNA
....4	Q210	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	R268	2007-000539	R-CHIP;200ohm,5%,1/10W,TP,1608	1	SA
....4	R273	2007-000539	R-CHIP;200ohm,5%,1/10W,TP,1608	1	SA
...3	M0107	BN63-02176A	SHIELD-COVER;MGM,SPTE,0.5	1	SNA
...3	T0562	6046-001013	STAND OFF;M3,L5,Ni PLT,SUM24L,#4-40	4	SNA
...3	MICOM3	BN97-00688A	ASSY HDCP;BN46-00018A,PS-42V6S,D73A,GENE	1	SNA
....4		BN46-00018A	KEY CODE-CERTIFICATE;(HDCP KEY)PPM42M5S,	1	SNA
...3	M0131	AA63-01304A	GASKET;TORINO,Conductive Fabric,1mm,14mm	1	SNA
...3	M0112	BN96-02858B	ASSY SHIELD P-PCB;23 TORINO,SPTE,T0.3	1	SNA
....4	M0131	AA63-01312A	GASKET;TORINO,Conductive Fabric,4mm,10mm	1	SNA
....4	M0107	BN63-02302A	SHIELD-COVER;TORINO,SPTE,T0.3,EMS	1	SNA
1	M0019	BN92-00920B	ASSY LABEL;MU15EO	1	SNA
1	M0003	BN92-01556D	ASSY BOX;LE23T51BX/XEU	1	SNA
..2		BN69-01179B	BOX-00,SET;23T5,SY-05,A,YEL,A1,EUROPE	1.02	SNA
1	M0113	BN92-01557A	ASSY P/MATERIAL;TORINO,23,23T50	1	SNA
..2	T0376	6902-000061	BAG AIR;LDPE,T0.2,L1000,W500,TRP,,,	0.013	SNA
..2	T0376	6902-000379	BAG AIR;LDPE,T0.2,W1000,L1800,TRP,-,--	0.004	SNA
..2	T0524	6902-000520	BAG PE;HDPE/NITRON(DOUBLE),T0.015/T0.5(D	1	SNA
..2		6902-000604	BAG WRAPPING;LDPE,T0.02,W500,L10000,TRP,	3.21	SNA
1	M0045	BN92-01573C	ASSY ACCESSORY;LE27T51BX/XEU	1	SNA
..2	M0045	BN96-02756D	ASSY ACCESSORY;LE27T51BX/XEU	1	SA
...3	T0268	3903-000067	CBF-POWER CORD;DT,GB,GP3/YES(A),I(IEC C1	1	SA

Level	Loc. No.	Code No.	Description & Specification	EA	SA/SNA
...3	T0524	6902-000110	BAG PE;LDPE,T0.05,W250,L400,TRP,28,2	2	SNA
...3	T0610	AA68-03242E	MANUAL-SAFETY GUIDE;All Model,SAMSUNG,8L	1	SNA
...3	ACCESSORY	AA68-03575A	MANUAL-01,REGISTRATION CARD;XEU,ENG,UK,W	1	SNA
...3	ACCESSORY	AA68-20051A	MANUAL-S/NETWORK;ALL,W/P 100(G),B5,ENG,S	1	SNA
...3	T0074	BN59-00488A	REMOCON;TORINO-EO,TM79,Single Micom,39,E	1	SA
...3	T0531	BN63-02177A	COVER-BOTTOM;MGM,23,27,32,HIPS,V0,GR503	1	SNA
...3	T0098	BN68-00514B	MANUAL-01,WARRANTY;PDP/LCD TV,SAMSUNG,W/	1	SNA
...3	M0156	BN68-00860G	MANUAL USERS-01;COMM,SAMSUNG,ENGLISH,UK,	1	SNA
...3	T0059	BN68-00907A	MANUAL-CARD;COMM,SAMSUNG,18 LANG,EUROPE,	1	SNA
...3	T0376	BN69-01086A	BOX-00,ACCESSORY;COMM,SW1,YEL,W573,D632,	1	SNA
...3	M0045	BN96-01800A	ASSY ACCESSORY;ROME32,SCREW	1	SA
....4	T0081	6002-001294	SCREW-TAPPING;BH,+,,M4,L16,ZPC(BLK)	4	SA
....4	ACCESSORY	6902-000128	BAG ZIPPER;LDPE,T0.05,W200,L150,TRP,8,2-	1	SNA
1	M0112	BN91-00947D	ASSY SHIELD;LE23T51BX/XEC	1	SNA
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,B,M3,L6,ZPC(BLK),SWRC	2	SNA
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,B,M3,L6,ZPC(BLK),SWRC	1	SNA
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,B,M3,L6,ZPC(BLK),SWRC	4	SNA
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,B,M3,L6,ZPC(BLK),SWRC	4	SNA
..2	M0081	6003-001003	SCREW-TAPTITE;BH,+,B,M4,L12,ZPC(BLK),SWR	5	SNA
..2	M0081	6003-001003	SCREW-TAPTITE;BH,+,B,M4,L12,ZPC(BLK),SWR	4	SNA
..2	M0081	6003-001003	SCREW-TAPTITE;BH,+,B,M4,L12,ZPC(BLK),SWR	4	SNA
..2	CCM1	6006-000245	SCREW-MACHINE;WSP,PH,+,M4,L8,ZPC(YEL),SW	1	SNA
..2	M2893	BH39-00362E	LEAD CONNECTOR;Torino-23,UL1007#26,5P,50	1	SA
..2	M2893	BN39-00603D	LEAD CONNECTOR;RE26**,UL1007#26,14P,100m	1	SA
..2	M2893	BN39-00691A	LEAD CONNECTOR;Torino-32,UL1007#26,16P,1	1	SA
..2		BN61-02028A	BRACKET-PANEL SIDE;32,MGM,SECC,T1.6	4	SNA
..2		BN61-02031A	BRACKET-GUIDE STAND;32,MGM,SECC,T1.6	1	SNA
..2	M0107	BN61-02065A	BRACKET-PCB;23" MGM,SECC,T1.0	1	SNA
..2	T0159	BN96-02580A	ASSY PCB P-SMPS;Free Voltage SMPS,GTR23	1	SA
..2	M0114	BN61-01778A	HOLDER-WIRE;NYLON-66,NATURAL or GRAY,DAF	1	SNA
..2	T0076	BN39-00693B	CBF HARNESS-INLET;TORINO,1617#22,3P,1P,R	1	SA
..2	T0069	AA60-00091K	SPACER-FELT;-,FELT,330X10,-,-,BLK,T0.35,	2	SNA
..2	M2893	BN39-00588D	LEAD CONNECTOR;TORINO 23*,UL20276#30,30P	1	SA
..2	M0131	AA63-01347A	GASKET;TORINO,Conductive Fabric,27mm,30m	1	SNA

7 Block Diagram

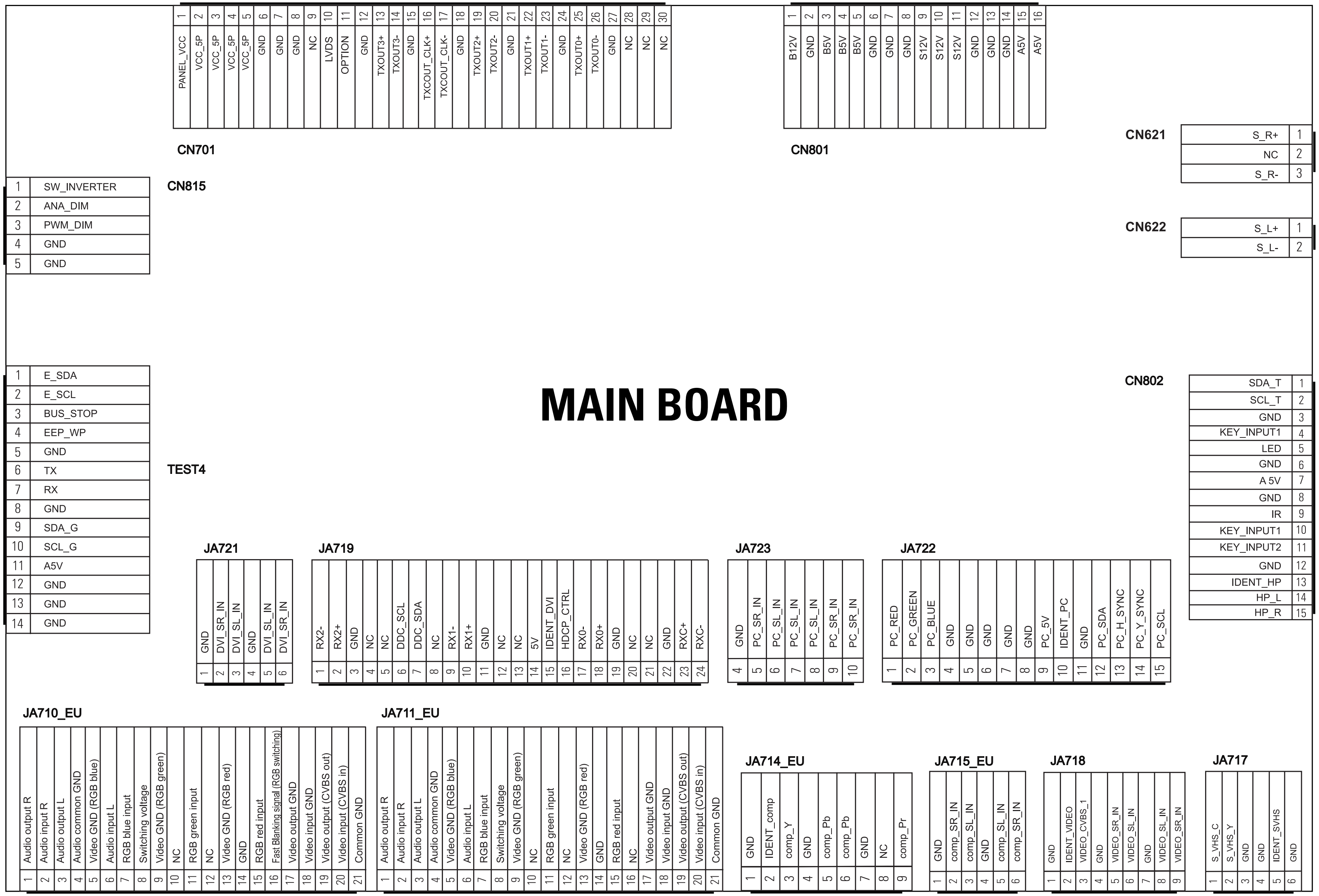
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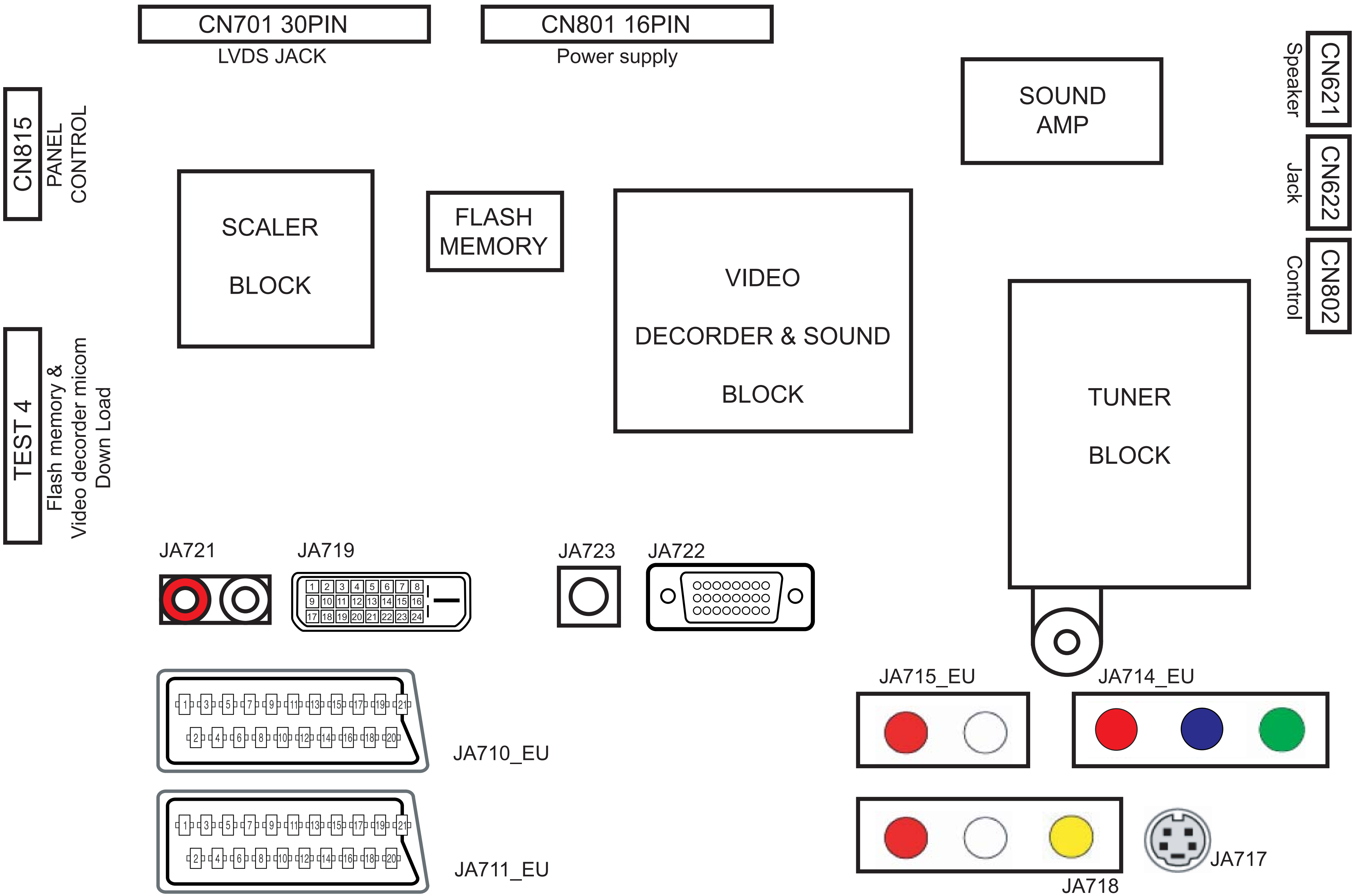
Memo

8 Wiring Diagram

8-1 LE23T51B / LE27T51B / LE32T51B Wiring Diagram



8-2 Main Board Layout



8-3 PIN characteristic

CN801 - Main Board power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NAME	B12V	GND	B5V	B5V	B5V	GND	GND	GND	B12VS	B12VS	B12VS	GND	GND	GND	A5V	A5V

Function Define

- B12V B8V, B5V-T
- B5V B5V-1, B5V, 5V-P, B1.8V
- B12VS B12VS
- A5V A5V, A3.3V-3, A3.3V, A3.3V-1, B3.3V, A1.8V

CN621 / CN622 - SPEAKER CONNECTOR

PIN	1	2	3
NAME	R+	NC	R-

PIN	1	2
NAME	L+	L-

CN802 - Front control

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NAME	SDA-T	SCL-T	GND	KEY INPUT1	LED	GND	A5V	GND	IR	KEY INPUT1	KEY INPUT2	GND	IDENT HP	HP-L	HP-R

Function Define
- A5V Front control board poewr supply
- KEY INPUT1,2/SDA/SCL Key control, from the memu, change up/down Etc.
- IR Remote control signal
- LED Control the timing and stand by LED color

CN815 - Panel control

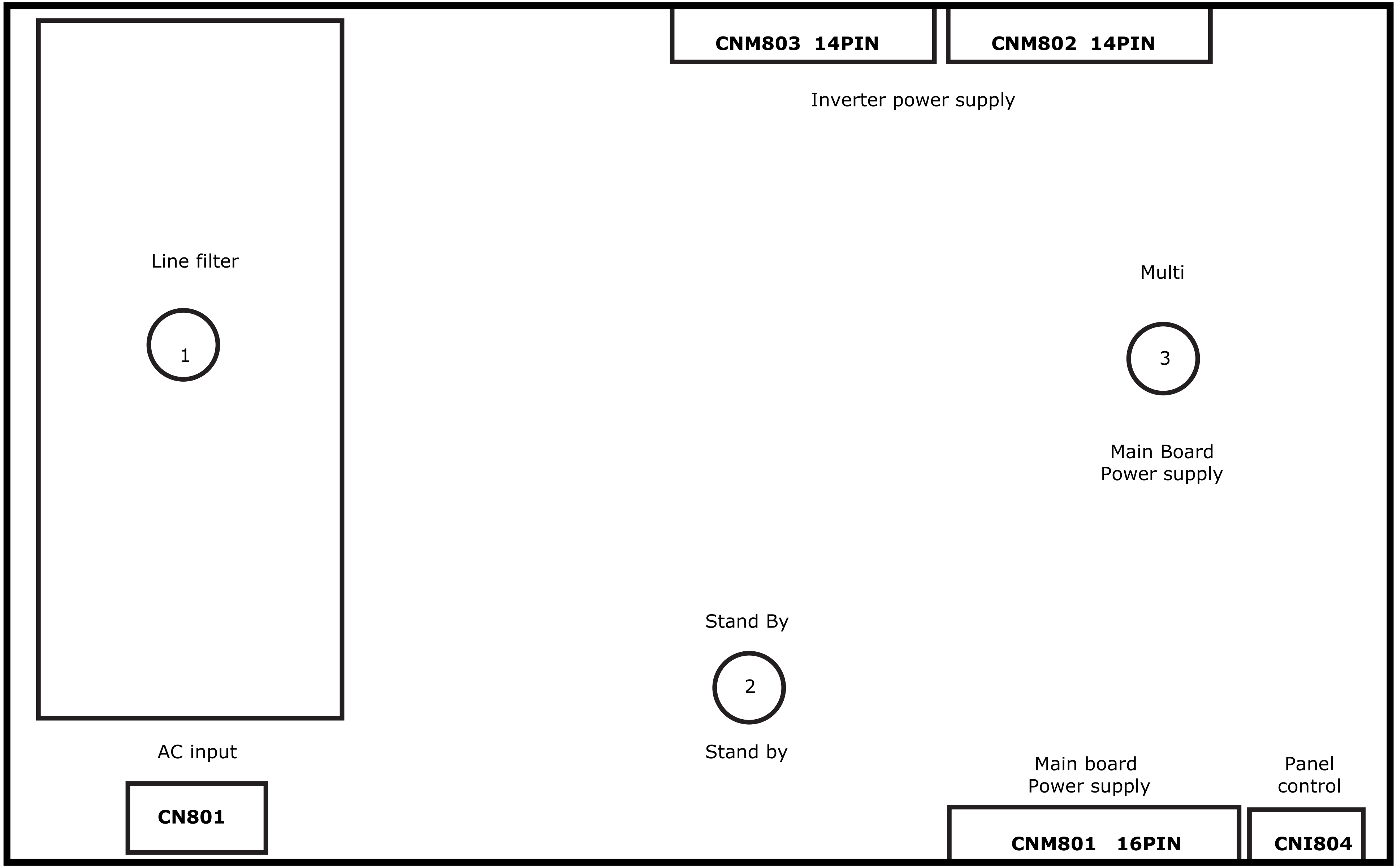
PIN	1	2	3	4	5
NAME	SW_inverter	Ana_dimming	PWM_dimming	GND	GND

Function Define
- SW_inverter panel inverter control, about 3.3V
- Ana_dimming panel dimming control
- PWM_dimming panel PWM control, duty 40% ~ 90%

CN702-LVDS Signal

PIN	NAME	PIN	NAME
1	VCC	16	TXOUTCLK+
2	VCC5P	17	TXOUTCLK-
3	VCC5P	18	GND
4	VCC5P	19	TXOUT2+
5	VCC5P	20	TXOUT2-
6	GND	21	GND
7	GND	22	TXOUT1+
8	GND	23	TXOUT1-
9	NC	24	GND
10	LVDS_option	25	TXOUT0+
11	NC	26	TXOUT0-
12	GND	27	GND
13	TXOUT3+	28	NC
14	TXOUT3-	29	NC
15	GND	30	NC

8-4 Power Board Layout



CN801 - AC Input

PIN	I	2
NAME	Live	Netural
VOLTAGE	AC	AC

Functing Define
- Refer to : AC Input

CN801 - Main Board power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NAME	13V	GND	5.4V	5.4V	5.4V	GND	GND	GND	12V	12V	12V	GND	GND	GND	ST7V	PWR

Functing Define
- ST7V Stand-By Output
- PWR Power On/Off Control

- Refer to : CN801 function define

CNM804 - Panel control

PIN	1	2	3	4	5
NAME	SW_inverter	Ana_dimming	PWM_dimming	GND	SENSOR POWER

Functing Define
- Refer to : CN815 function define

CN802 - Inverter power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	24V	24V	24V	24V	24V	GND	GND	GND	GND	GND	GND	B/L	A_D	P_D

Functing Define

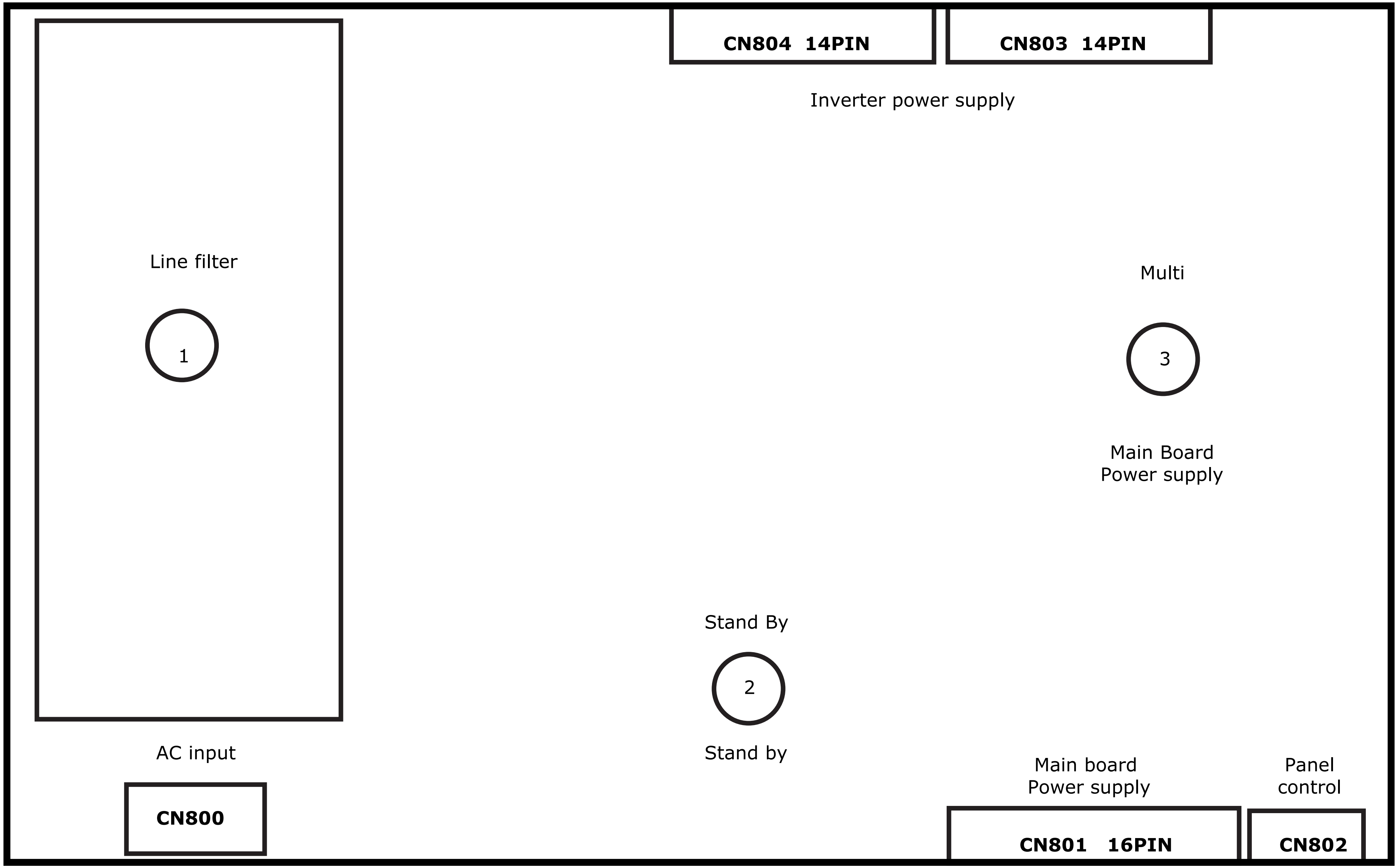
- AMLCD Panel Inverter Power
- 24V LAMP INVERTER Voltage
- B/L Brightness sensor power
- A_D ANA_DIMMING
- P_D PWM_DIMMING

CN803 - Inverter power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	24V	24V	24V	24V	24V	GND	GND	GND	GND	GND	A_D	B/L	P_D	GND

Functing Define

- AUO Panel Inverter Power
- 24V LAMP INVERTER Voltage
- B/L Brightness sensor power
- A_D ANA_DIMMING
- P_D PWM_DIMMING


CN804 14PIN
CN803 14PIN
Inverter power supply
Line filter
1
Multi
3
Main Board
Power supply
Stand By
2
Stand by
AC input
CN800
Main board
Power supply
Panel
control
CN801 16PIN
CN802

CN801 - AC Input

PIN	I	2
NAME	Live	Netural
VOLTAGE	AC	AC

Functing Define
- Refer to : AC Input

CN801 - Main Board power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NAME	13V	GND	5.4V	5.4V	5.4V	GND	GND	GND	12V	12V	12V	GND	GND	GND	ST7V	PWR

Functing Define
- ST7V Stand-By Output
- PWR Power On/Off Control

- Refer to : CN801 function define

CNM804 - Panel control

PIN	1	2	3	4	5
NAME	SW_inverter	Ana_dimming	PWM_dimming	GND	SENSOR POWER

Functing Define
- Refer to : CN815 function define

CN803 - Inverter power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	24V	24V	24V	24V	24V	GND	GND	GND	GND	GND	GND	B/L	A_D	P_D

Functing Define
- AMLCD Panel Inverter Power
- 24V LAMP INVERTER Voltage
- B/L Brightness sensor power
- A_D ANA_DIMMING
- P_D PWM_DIMMING

CN804 - Inverter power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	24V	24V	24V	24V	24V	GND	GND	GND	GND	GND	B/D	P_L	GND	B/L

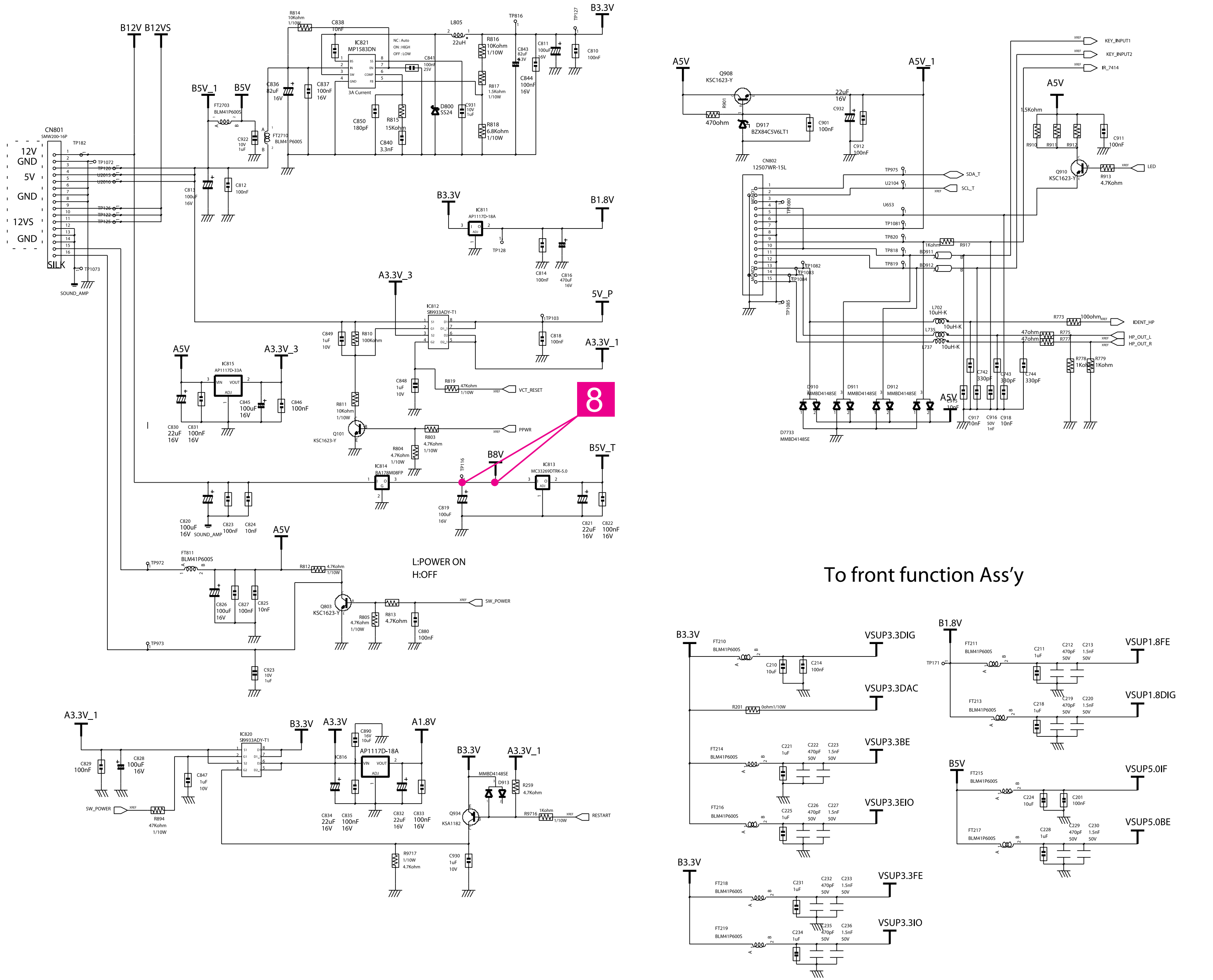
Functing Define
- CMO Panel Inverter Power
- 24V LAMP INVERTER Voltage
- B/L Brightness sensor power
- P_D PWM_DIMMING

Memo

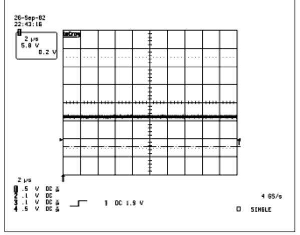
9 Schematic Diagrams

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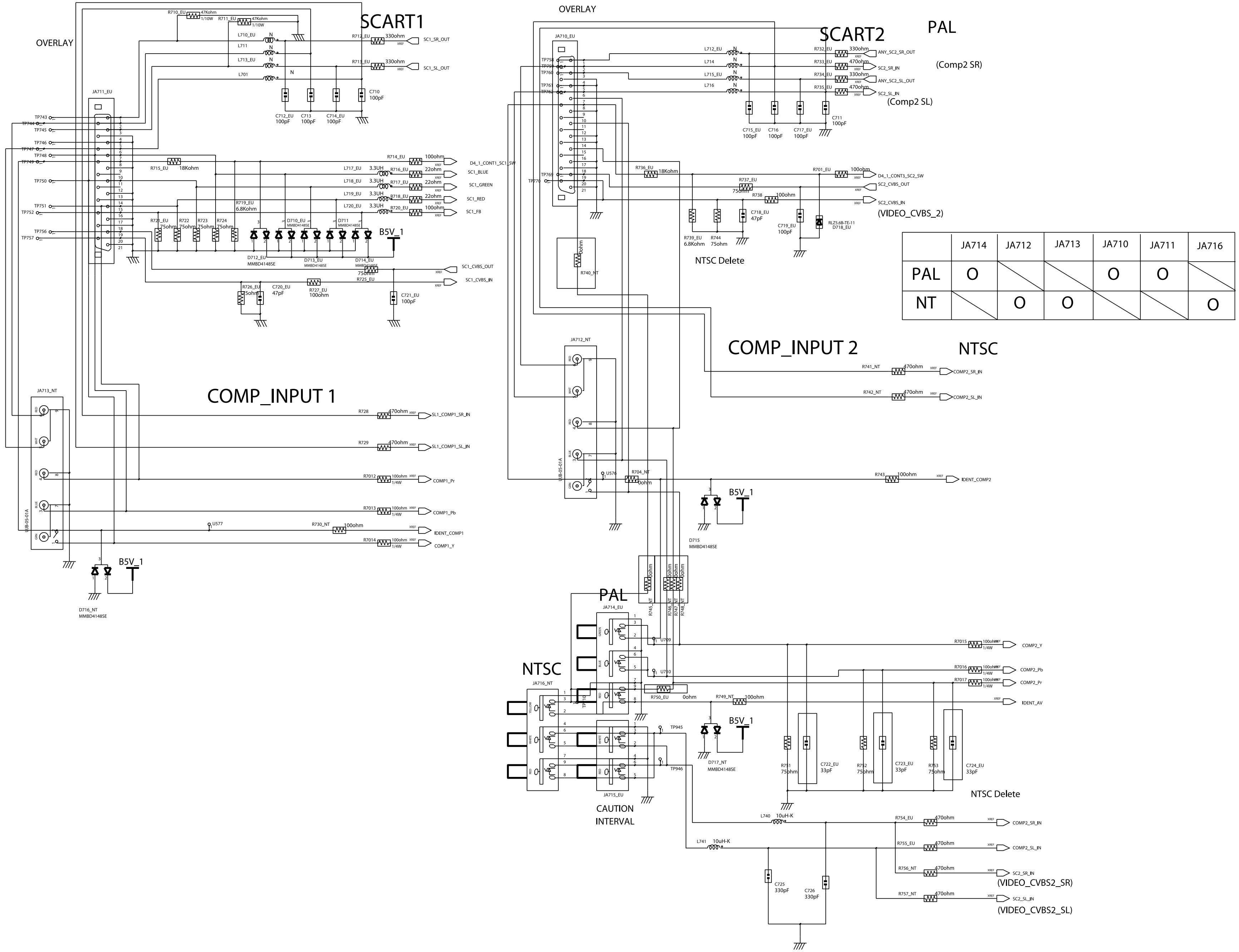
9-1 Power & Function Schematic Diagram



8 DC +8V

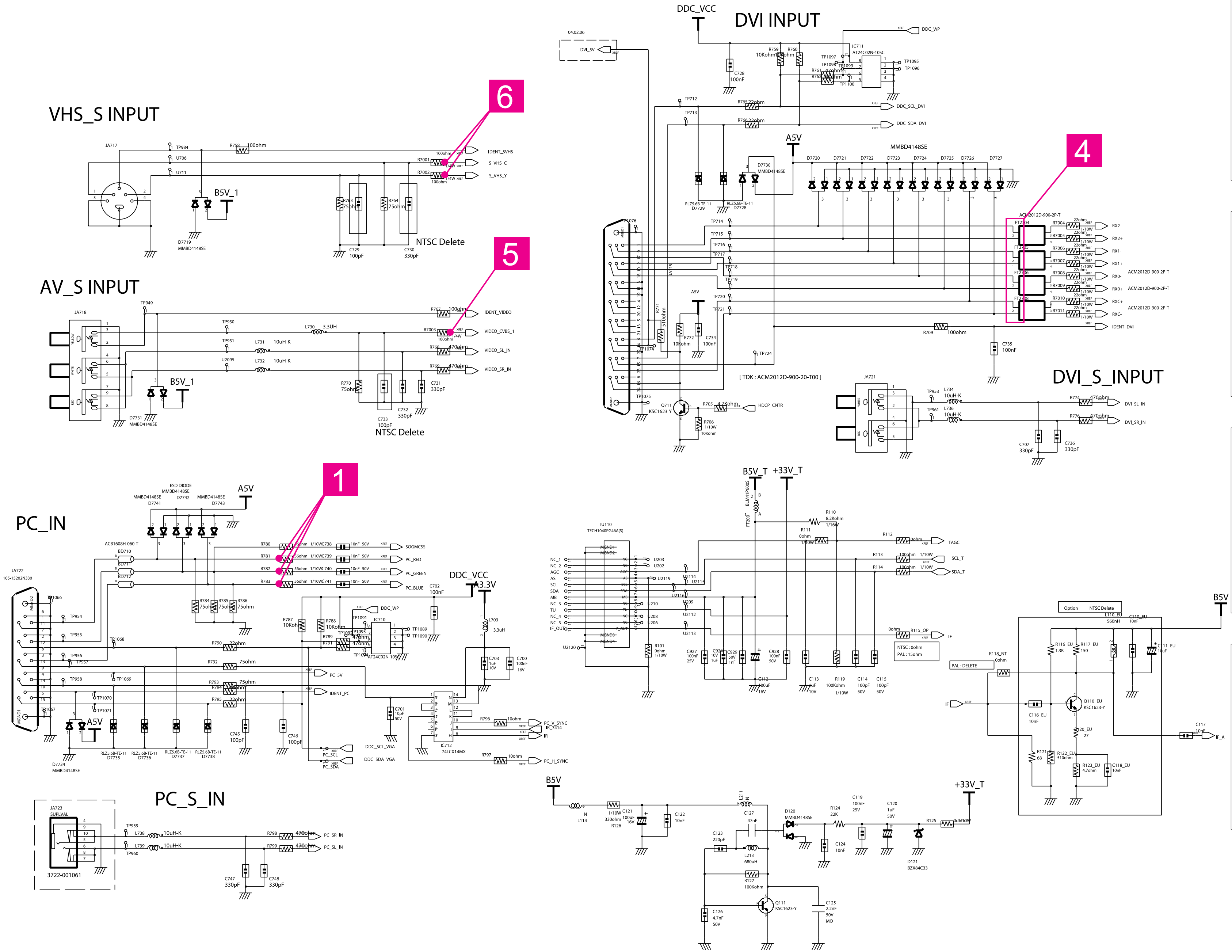


9-2 In_Out_Jack Schematic Diagram

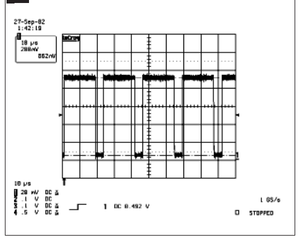


	JA714	JA712	JA713	JA710	JA711	JA716
PAL	O			O	O	
NT		O	O			O

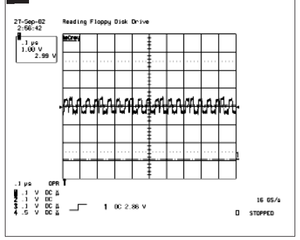
9-3 In-Out-Jack Schmetic Diagram



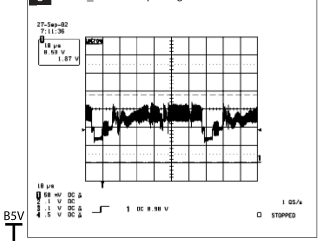
1 R,G,B Output Signal of IC906



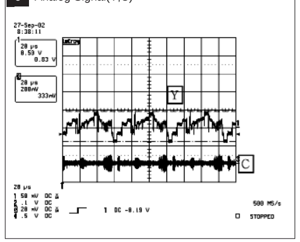
4 Signal of DVI(Data)



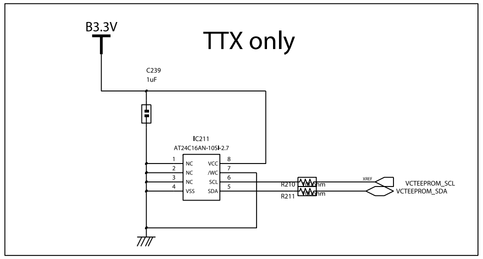
5 Tuner_CVBS Output Signal

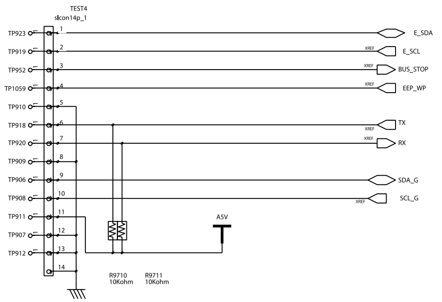


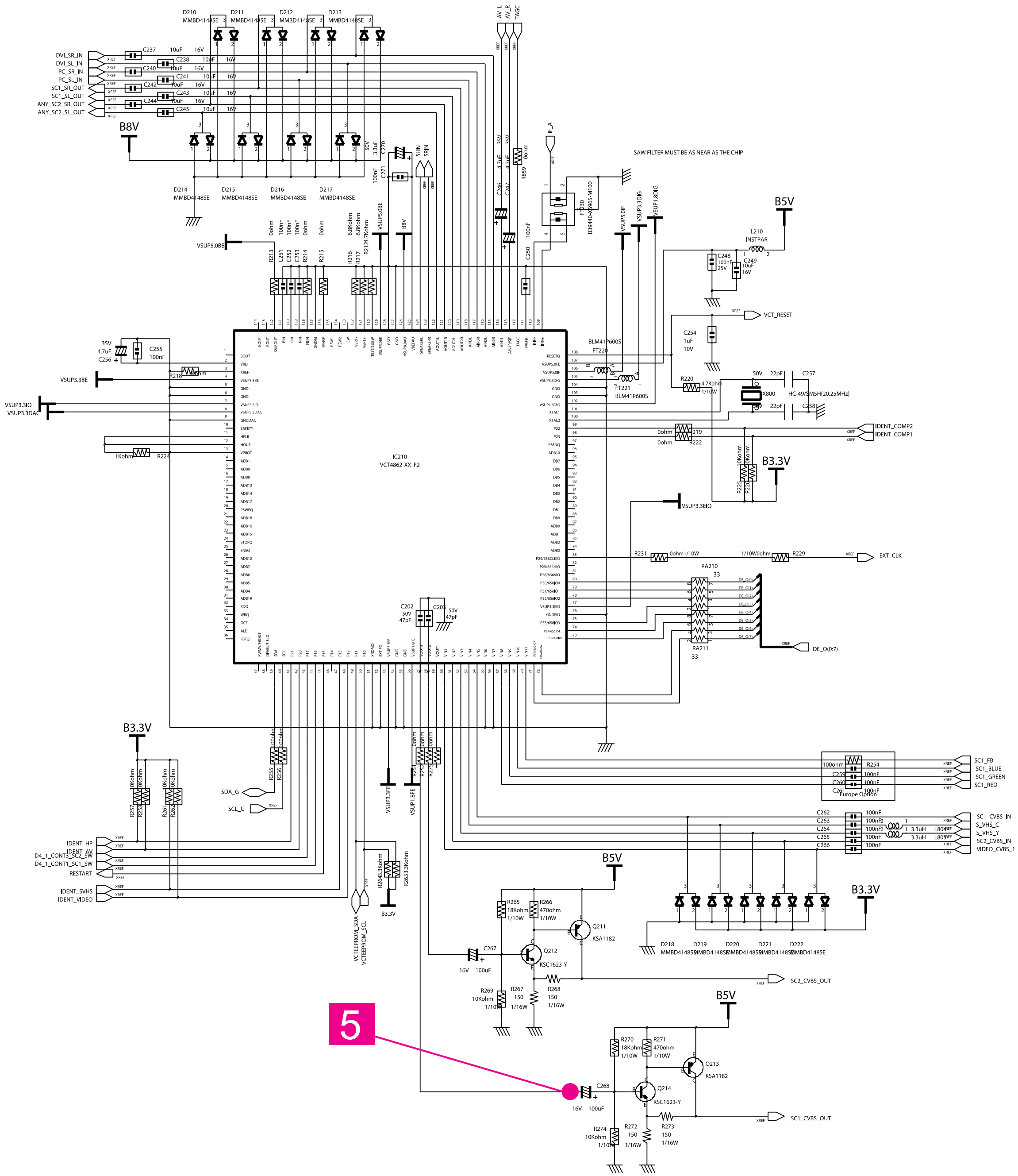
6 Analog Signal(Y,C)



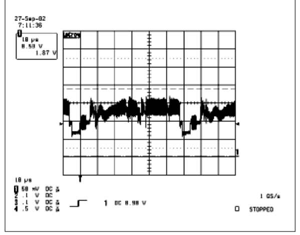
9-4 Video Decoder & Sound Processing IC Schematic Diagram



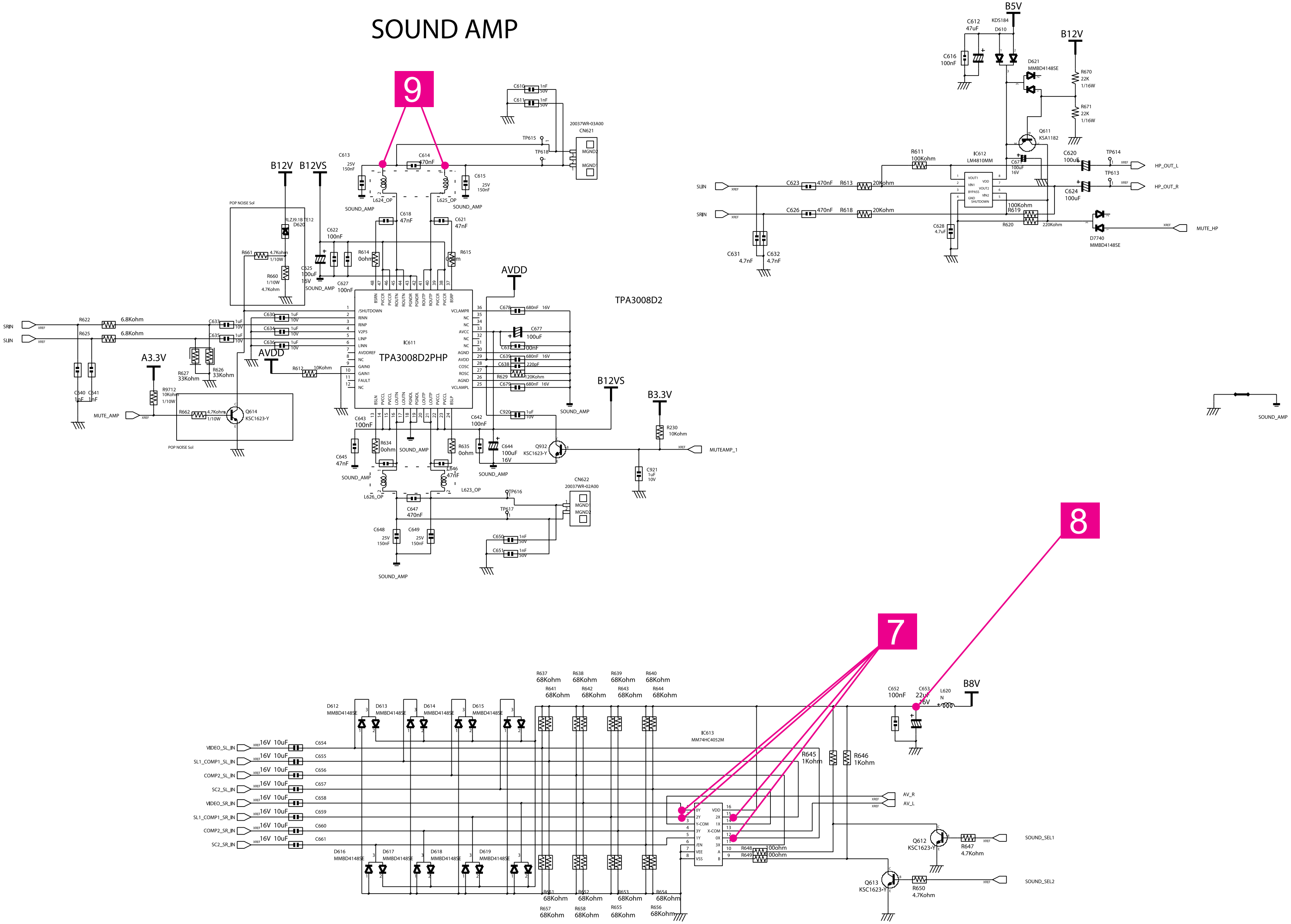




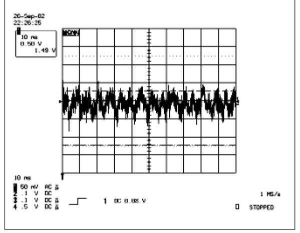
5 Tuner_CVBS Output Signal



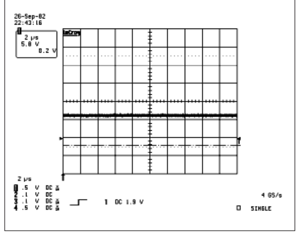
9-5 Sound Amp Schmetic Diagram



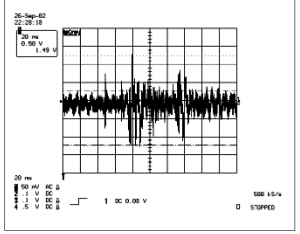
7 The Signal are Inputed to IC610



8 DC +8V

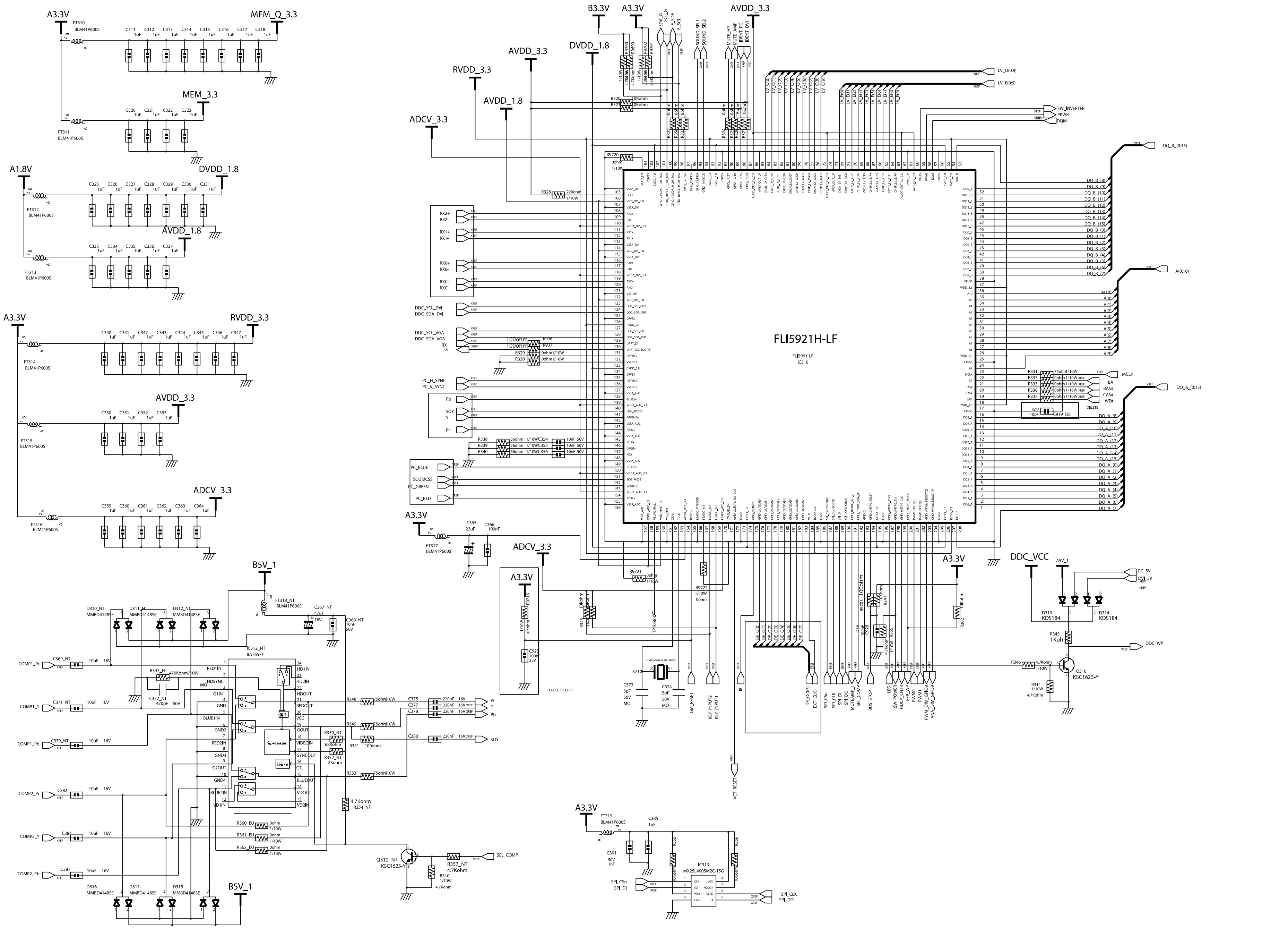


9 Output WaveForm

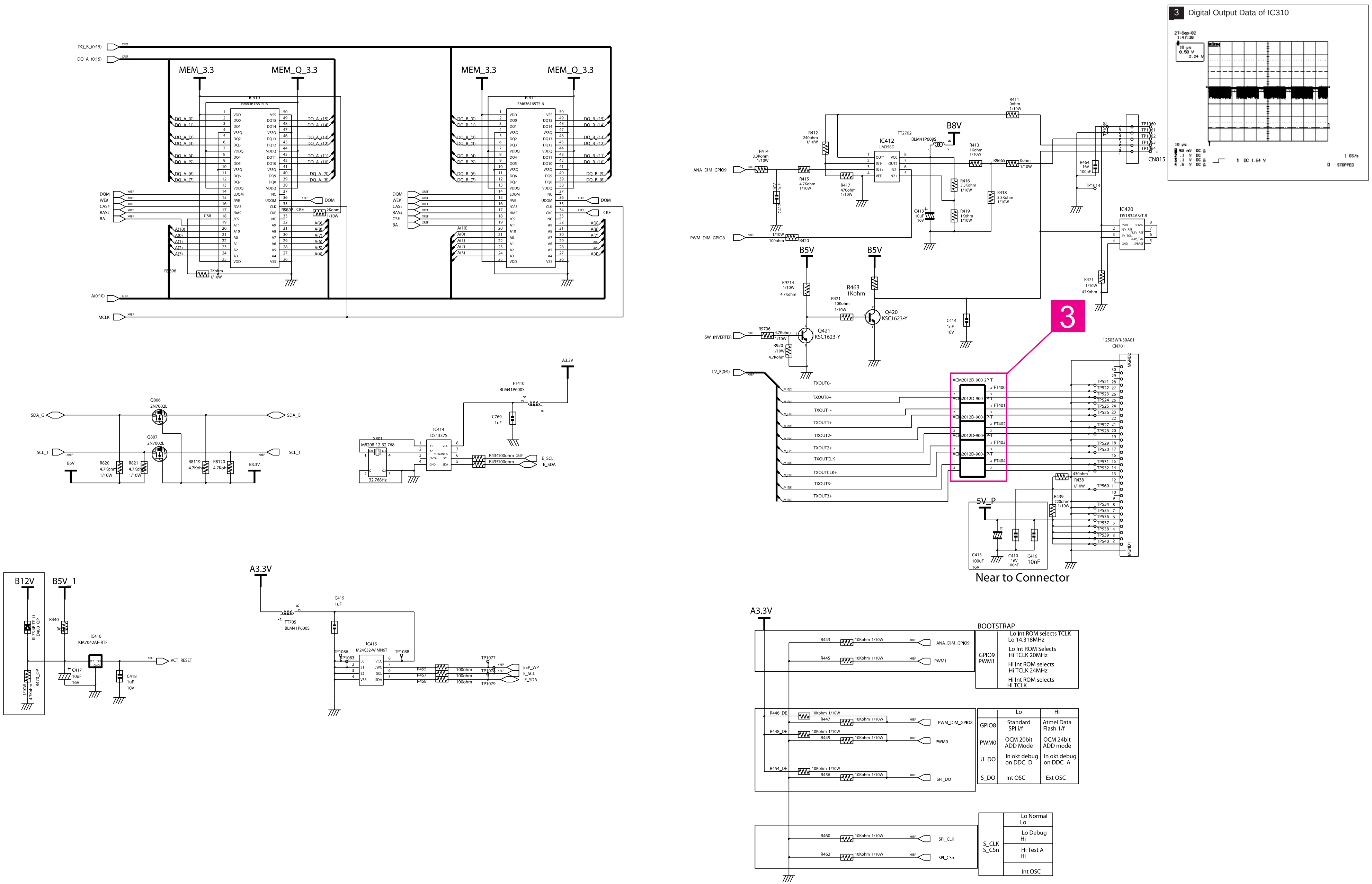


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9-6 Scaler IC Schmetic Diagram



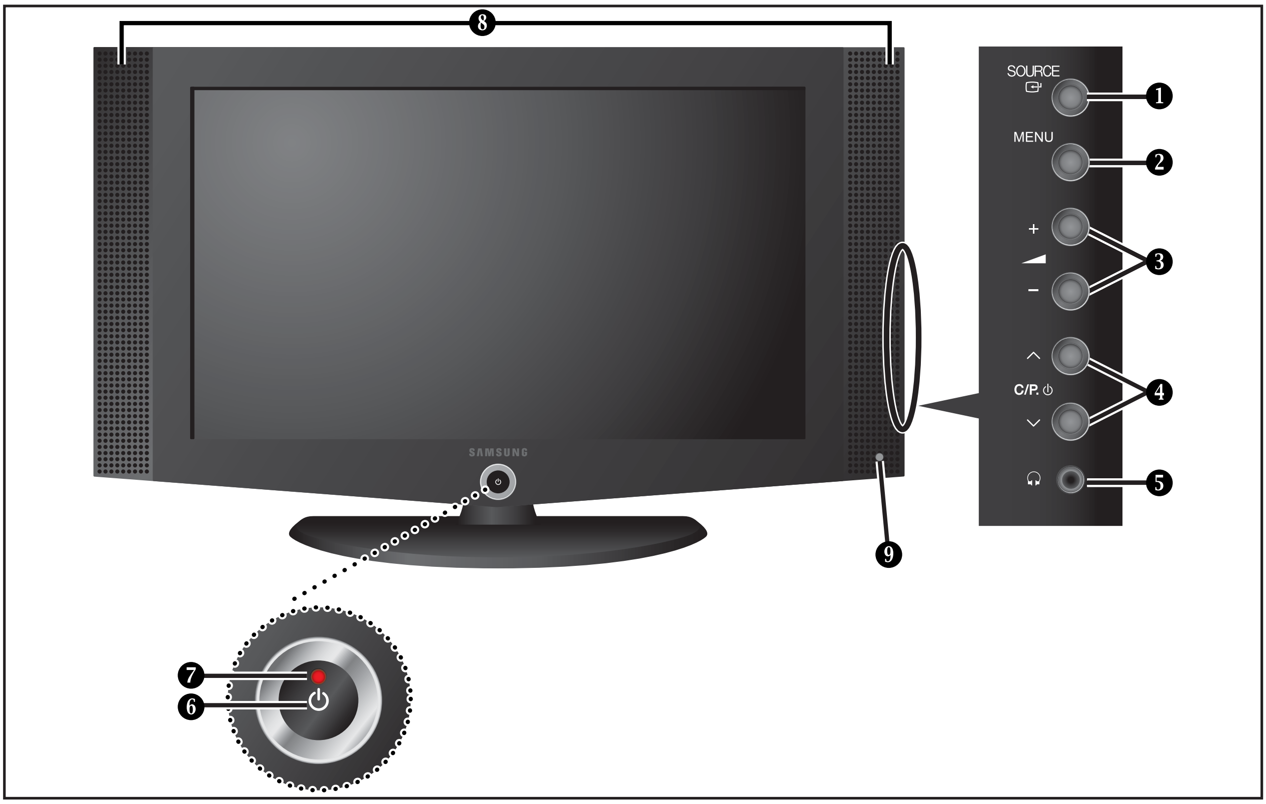
9-7 Memory & LVDS Output Schmetic Diagram



Memo

10 Operating Instructions and Installation

10-1 Front



- The product color and shape may vary depending on the model.

1. SOURCE

Displays a menu of all of the available input sources (TV, Ext.1, Ext.2, AV, S-Video, Component, PC, DVI). In the on-screen menu, use this button as you use the ENTER button on the remote control.

2. MENU

Press to see an on-screen menu of your TV's features.

3. + ◢ −

Press to decrease or increase the volume. In the on-screen menu, use the + ◢ − buttons as you use the ◄ and ► buttons on the remote control.

4. ∨C/P.⏻∧

Press to change channels. In the on-screen menu, use the ∨C/P.⏻∧ buttons as you use the ▼and▲ buttons on the remote control.

5. (HEADPHONE JACK)

Connect a set of external headphones to this jack for private listening.

6. ⏻(POWER)

Press to turn the TV on and off.

7. POWER INDICATOR

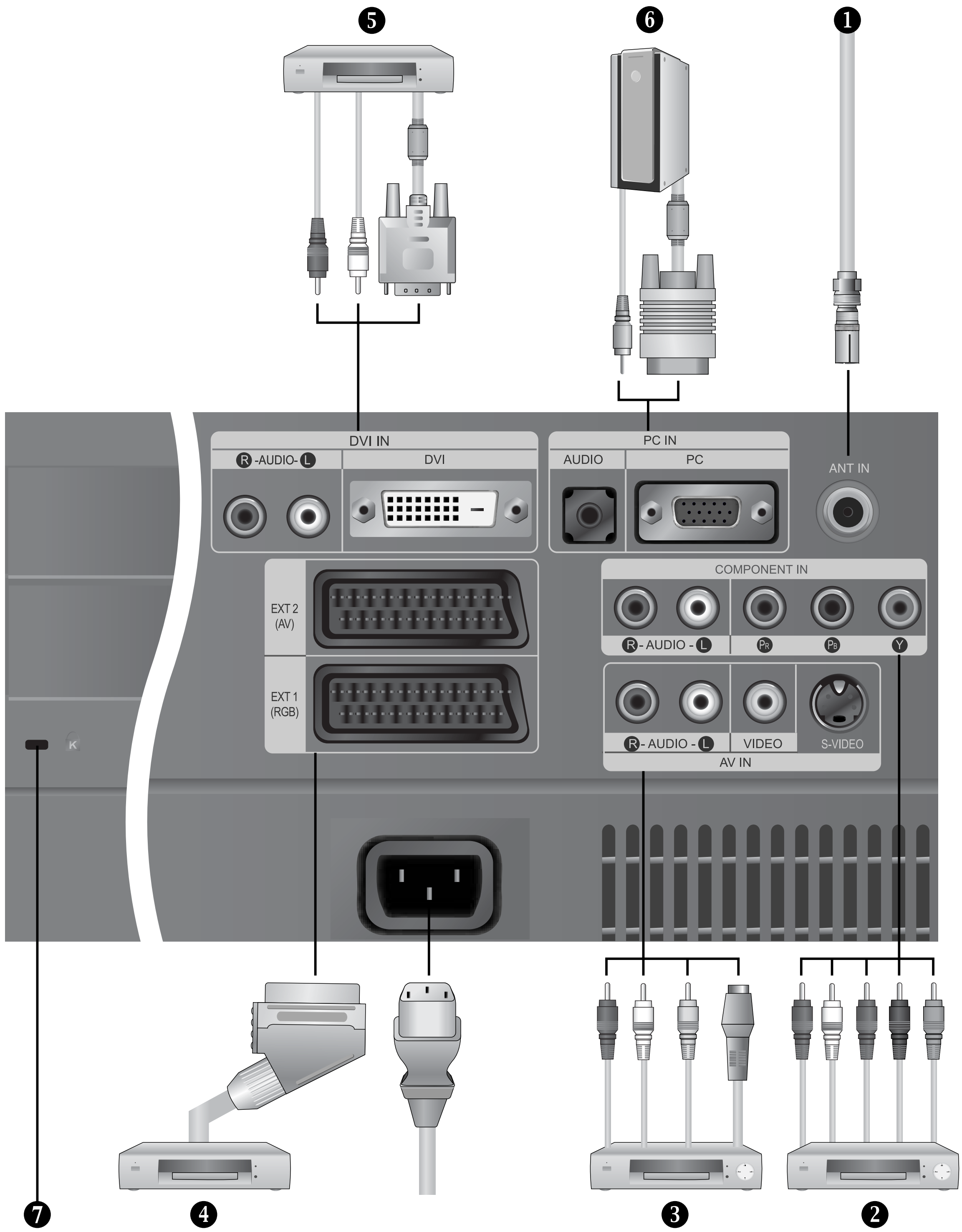
Blinks and turns off when the power is on and lights up in stand-by mode.

8. SPEAKERS

9. REMOTE CONTROL SENSOR

Aim the remote control towards this spot on the TV.

10-2 Connection Panel



1. **Connecting an Aerial or Cable Television Network**
   To view television channels correctly, a signal must be received by the set from one of the following sources:
   - An outdoor aerial / A cable television network / A satellite network

2. **Connecting Component Devices (DTV/DVD)**
   - Connect component video cables (optional) to component connector ("PR", "PB", "Y") on the rear of your set and the other ends to corresponding component video out connectors on the DTV or DVD.
   - If you wish to connect both the Set-Top Box and DTV (or DVD), you should connect the Set-Top Box to the DTV (or DVD) and connect the DTV (or DVD) to component connector ("PR", "PB", "Y") on your set.
   - The PR, PB and Y connectors on your component devices (DTV or DVD) are sometimes labeled Y, B-Y and R-Y or Y, Cb and Cr.
   - Connect RCA audio cables (optional) to ¡°R - AUDIO - L¡± on the rear of your set and the other ends to corresponding audio out connectors on the DTV or DVD.

3. **Connecting External A/V Devices**
   - Connect RCA (optional) or S-VIDEO cable (optional) to an appropriate external A/V device such as VCR, DVD or Camcorder.
   - Connect RCA audio cables (optional) to ¡°R - AUDIO - L¡± on the rear of your set and the other ends to corresponding audio out connectors on the A/V device.

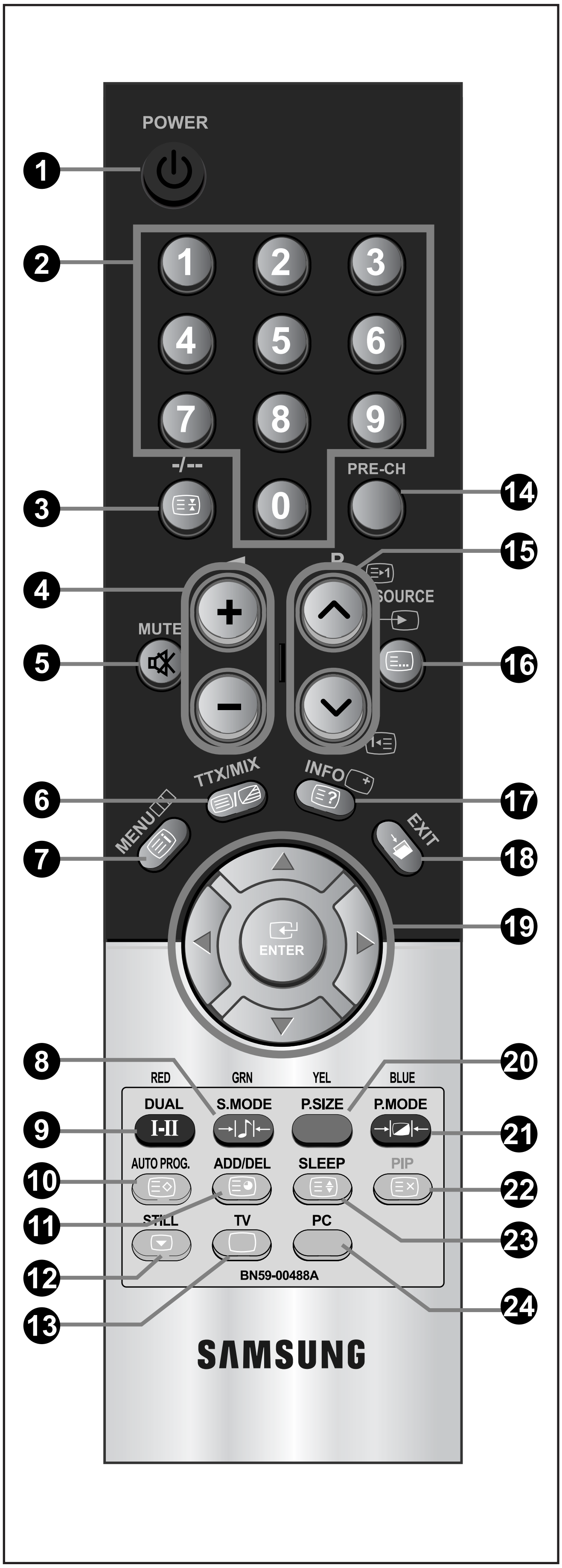
4. **Connecting Set-Top Box, VCR or DVD**
   - Connect the VCR or DVD SCART cable (optional) to the SCART connector of the VCR or DVD.

5. **Connecting DVI**
   - Connect the DVI connector to the DVD connector.
   - Connect the stereo audio cable (optional) to "R - AUDIO - L" on the rear of your set and the other end to "Audio Out" of the sound card on your DVD.
   - DVI dose not support PC function.

6. **Connecting Computer**
   - Connect the D- Sub cable (optional) to "PC (PC IN)" on the rear of your set and the other end to the Video Card of your computer.
   - Connect the stereo audio cable (optional) to "AUDIO (PC IN)" on the rear of your set and the other end to "Audio Out" of the sound card on your computer.

7. **Kensington Lock**
   - The Kensington lock (optional) is a device used to physically fix the system when used in a public place.
   - If you want to use a locking device, contact the dealer where you purchased the TV.

10-3 Remote Control



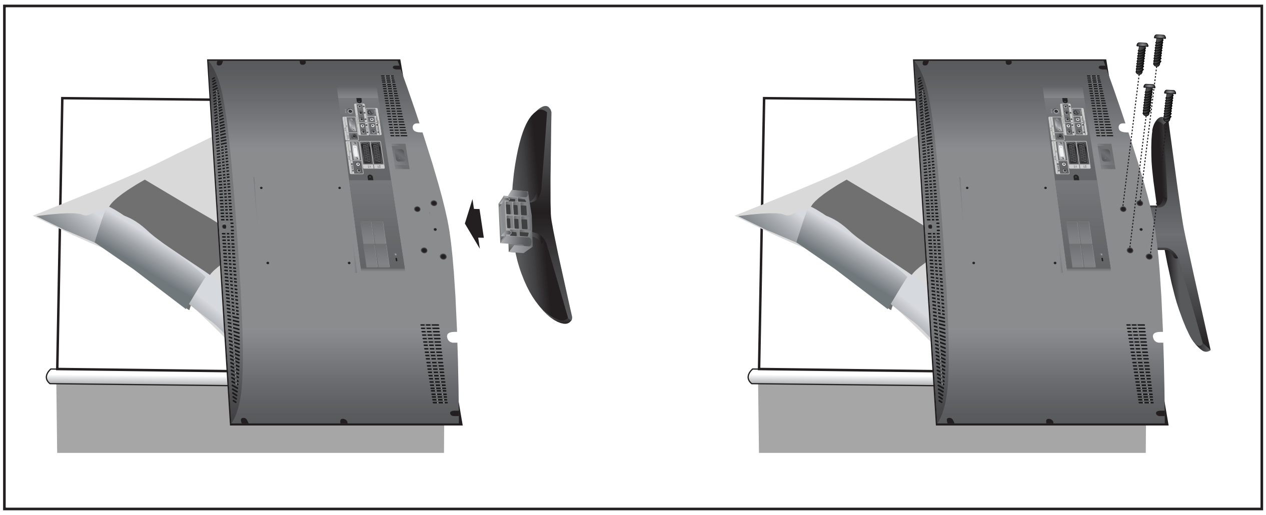
1. Television Standby button
2. Number buttons for direct channel access
3. One/Two-digit channel selection
4. ⊕ Volume increase
   ⊖ Volume decrease
5. Temporary sound switch-off
7. Displays the main on-screen menu
8. Sound effect selection
9. Sound mode selection
10. Press to automatically store selected TV/cable channels
11. Use to store and delete channels to/from memory
12. Picture freeze
13. Selects the TV mode directly
14. Previous channel
15. P ∧ Next channel
    P ∨ Previous channel
16. Available source selection
17. Use to see information on the current broadcast
18. Exit the on-screen menu
19. Control the cursor in the menu
20. Picture size selection
21. Picture effect selection
22. Picture-In-Picture On/Off
23. Automatic Power-off
24. Selects the PC mode directly

- Teletext Functions -

3. Teletext hold
6. Teletext display/mix both teletext information and the normal broadcast
7. Teletext index
10. Teletext store
11. Teletext sub page
13. Exit from the teletext display
15. P ∧ : Teletext next page
    P ∨ : Teletext previous page
16. Teletext mode selection (LIST/FLOF)
17. Teletext reveal
22. Teletext cancel
23. Teletext size selection

8,9,20,21.
Fastext topic selection

10-4 Installing the Stand



1. Place the TV faced down on a soft cloth or cushion on a table.
2. Put the stand into the hole at the bottom of the TV.
3. Insert screw into the hole indicated and tighten

Memo

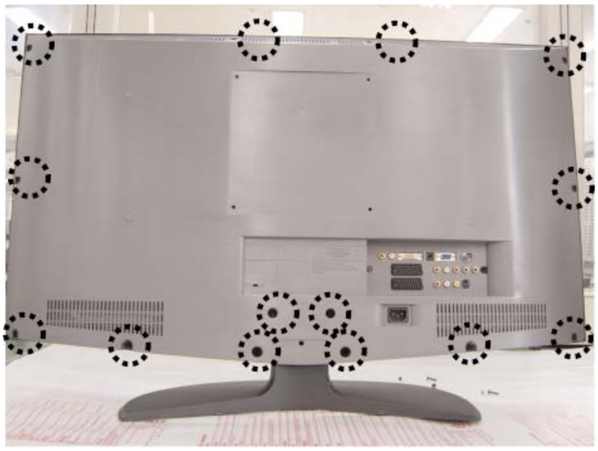
11 Disassembly and Reassembly

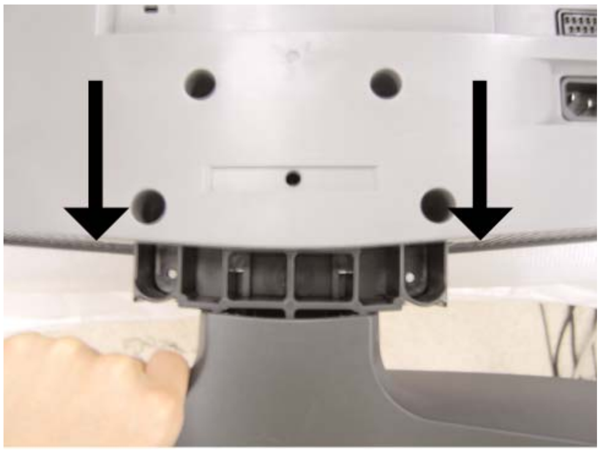
This section of the service manual describes the disassembly and reassembly procedures for the LE23T51B/LE27T51B/LE32T51B TFT-LCD monitors.

⚠ **WARNING: This monitor contains electrostatically sensitive devices. Use caution when handling these components.**
(ONLY LE32T51B) Check the connector of POWER BOARD which are CNM 802, 803.
IF Panel MARK is A(AUO), The wire which is from PANEL INVERTER Must be connected into CNM 803.
IF Panel MARK is S(Sec), The wire which is from PANEL INVERTER Must be connected into CNM 802.

11-1 Disassembly

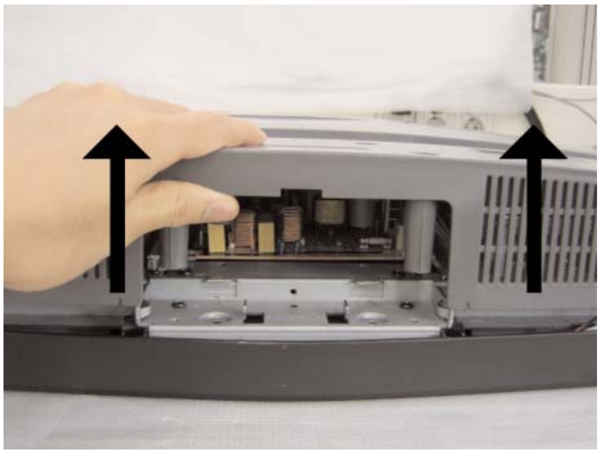
⚠ **Cautions: 1. Disconnect the monitor from the power source before disassembly.**





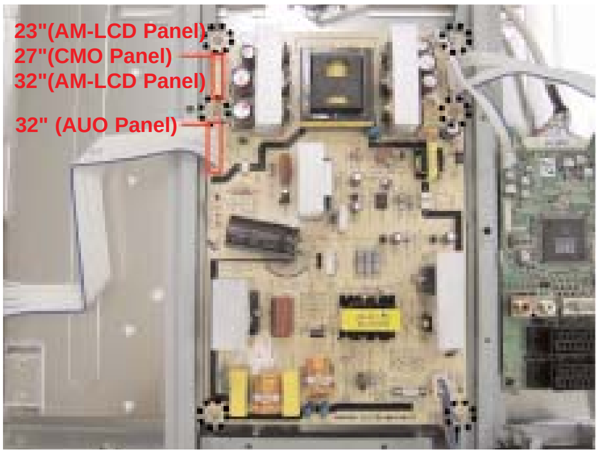
1. Place LCD-TV face down on cushioned table.
   Remove 14 screws from the rear-cover and Remove stand.





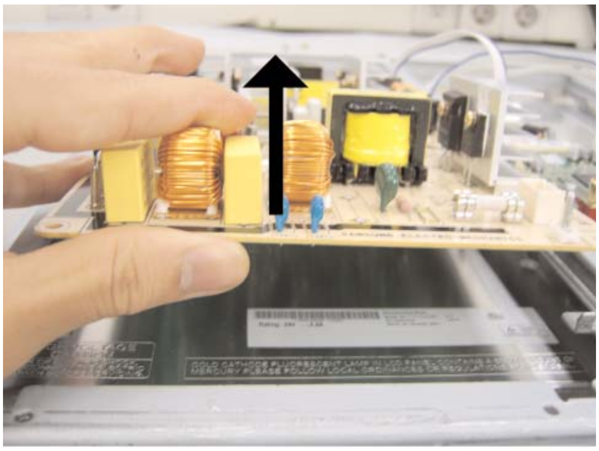
2. Remove 2 screws from the cover-jack.
   Lift up the rear-cover.



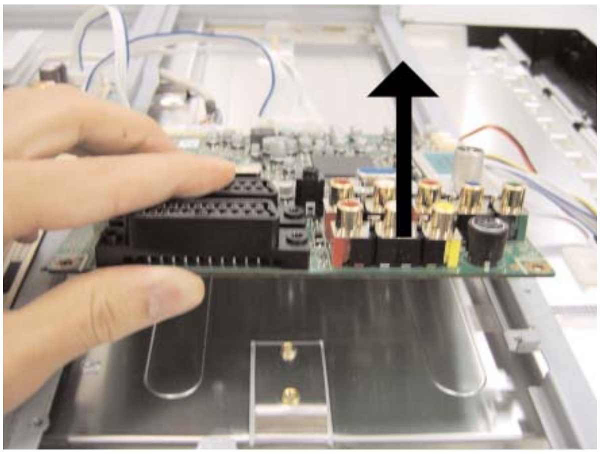


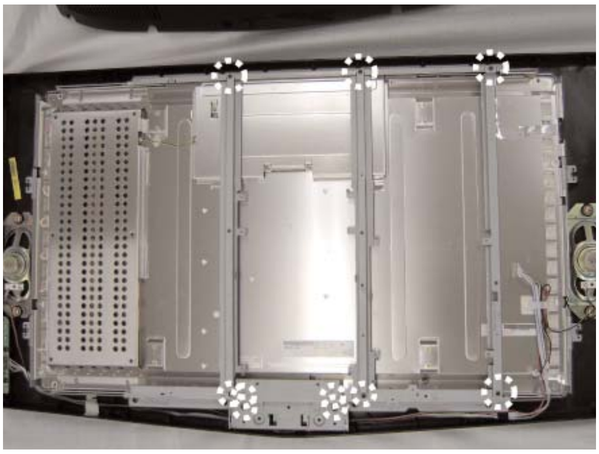
3. Disconnect cables and remove 6 screws from the power board.





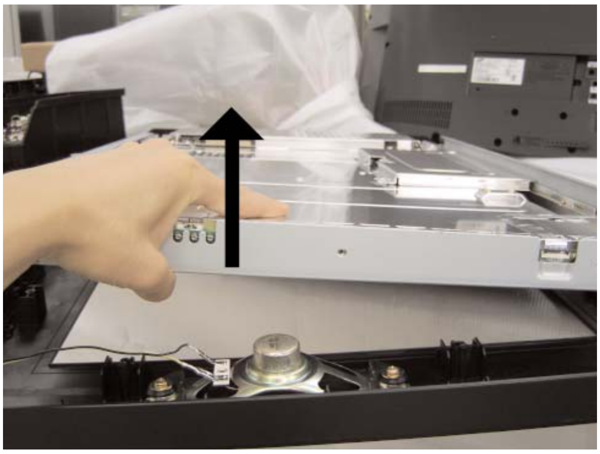
4. Remove 4 screws from the main board.
   Lift up the power board.



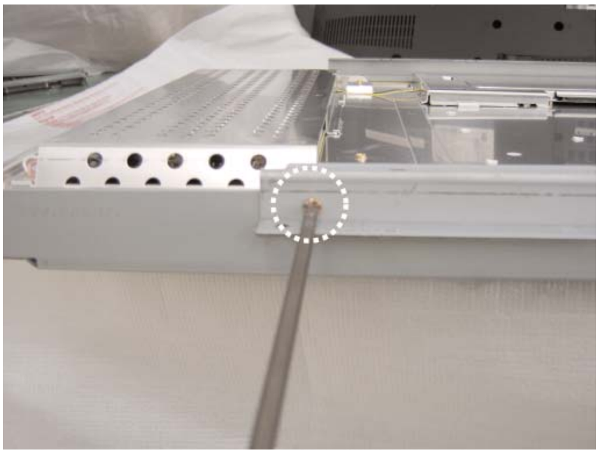


5. Lift up the main board and remove 10 secews from the BRKT.





6. Remove 4 screws and Lift up the Lcd panel.



7. Remove 4 screws

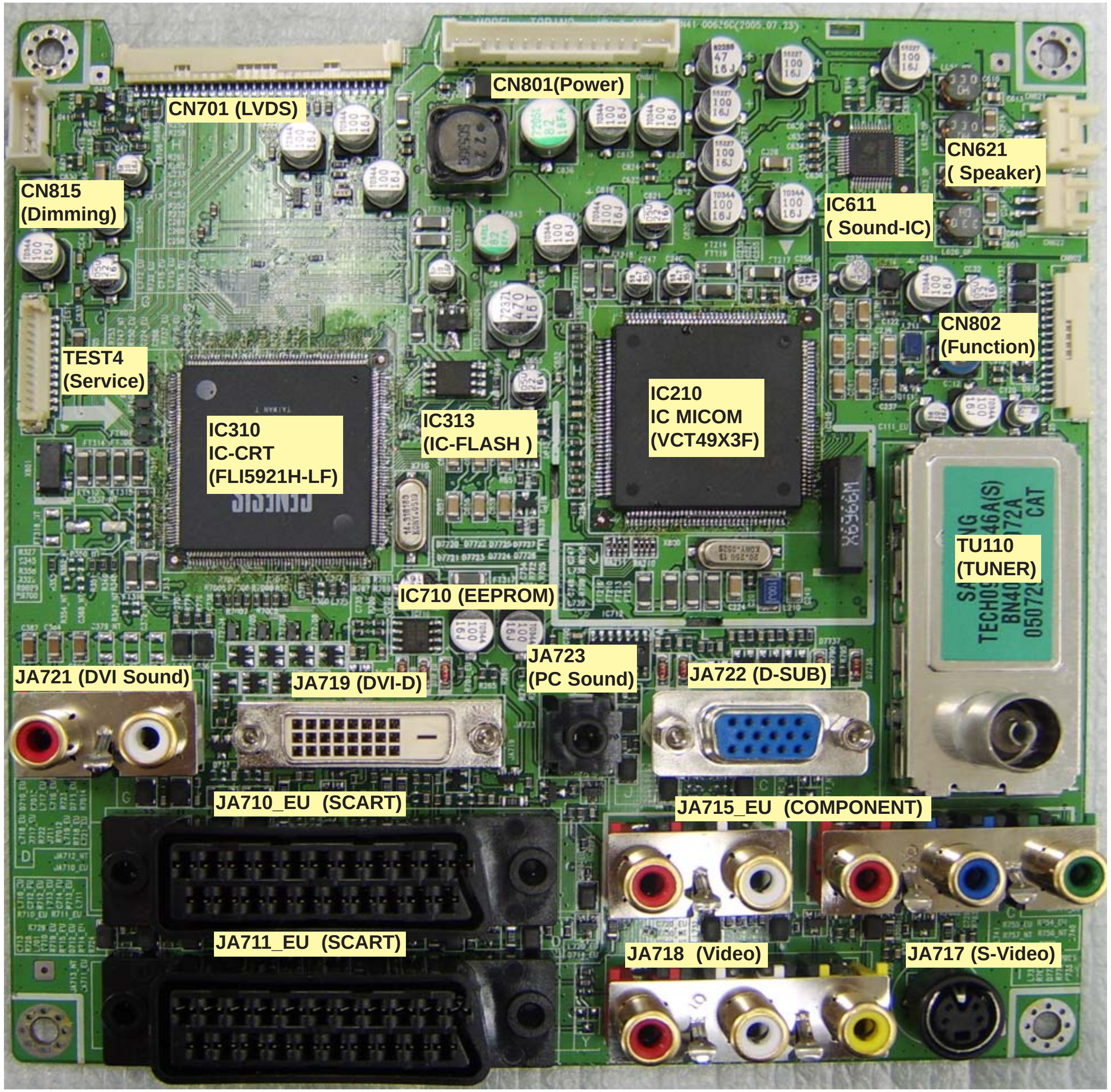
11-2 Reassembly

Reassembly procedures are in the reverse order of disassembly procedures.

Memo

12 PCB Layout

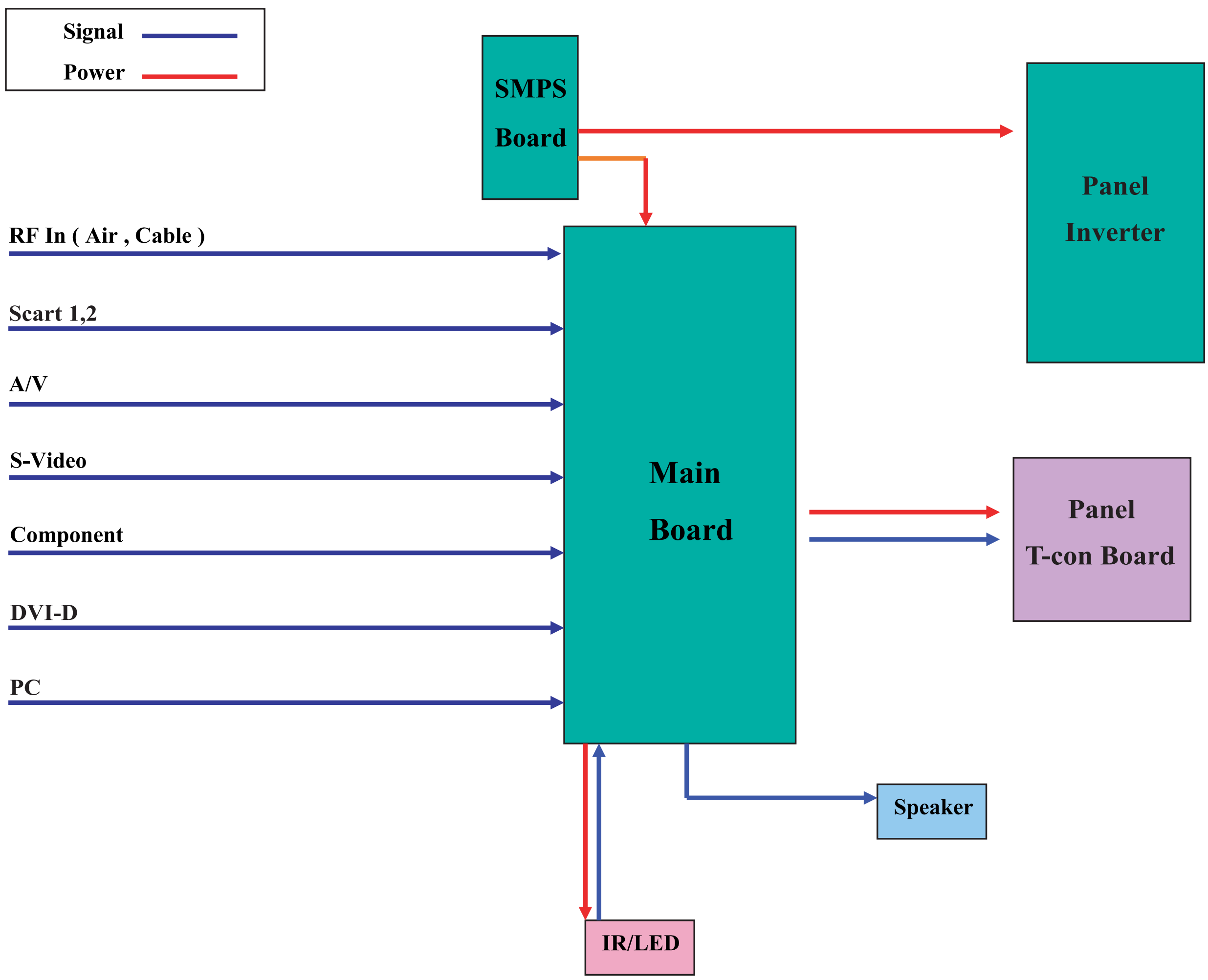
12-1 Main PCB Layout



Memo

13 Circuit Descriptions

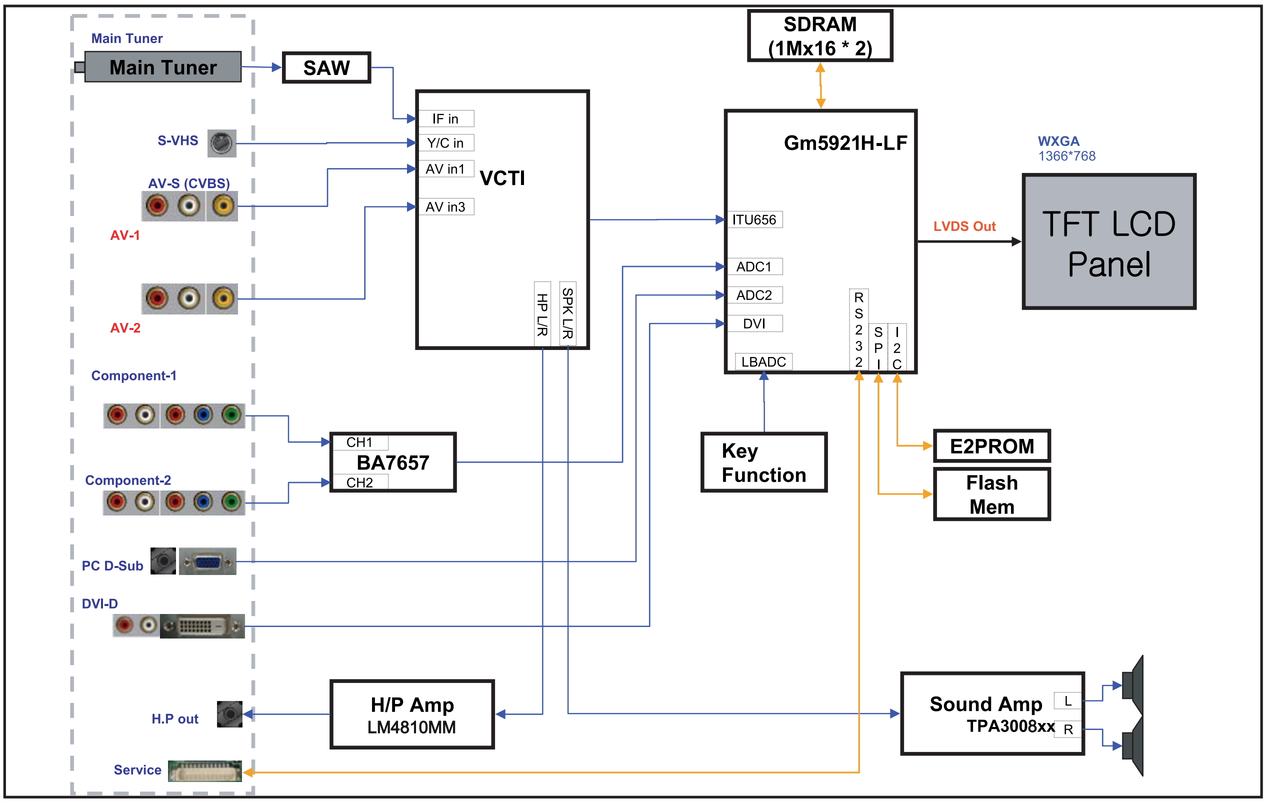
13-1 Block description



Torino consists of three main blocks

1. Main board : Video signal processing
2. SMPS board : Power supply
3. Panel Inverter & T-con board : LCD Panel control

13-2 Main Block



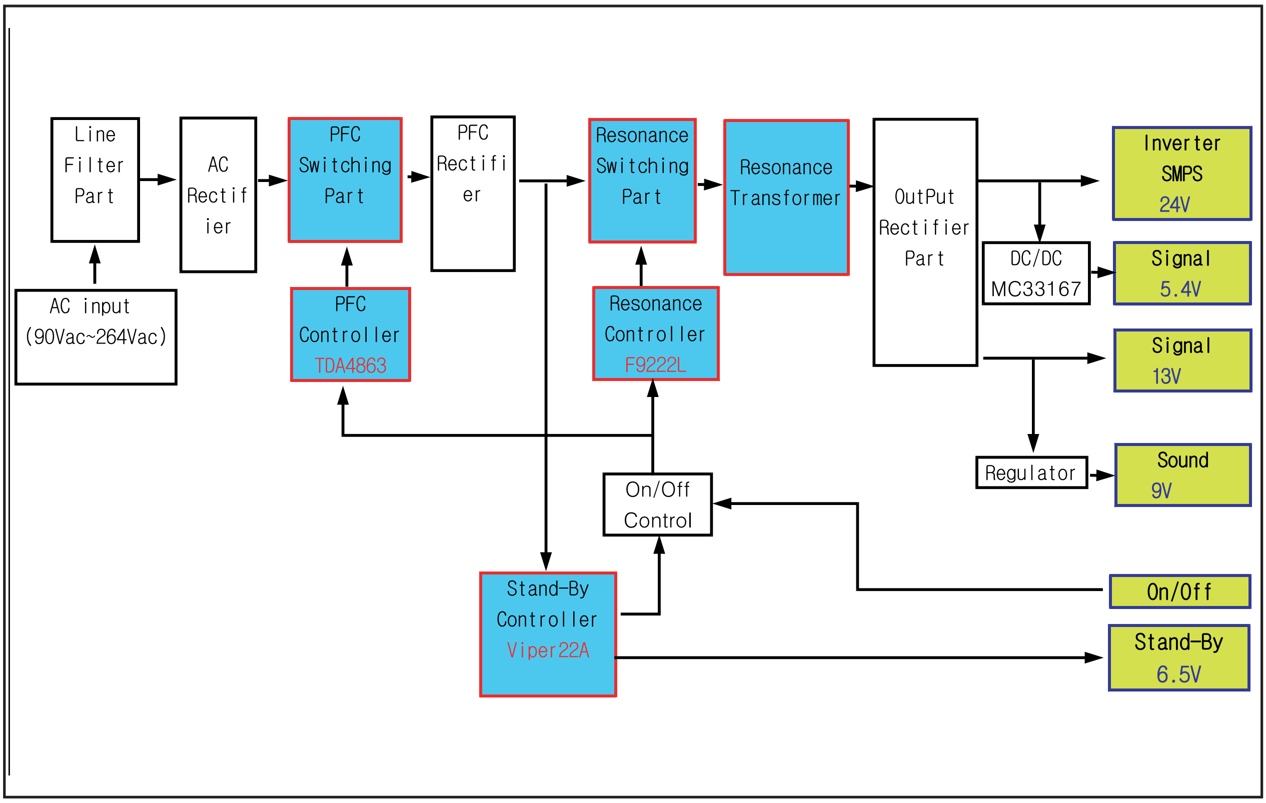
* VCTi : IF, Scart1/2, AV, S-Video, input and Video decoding, Audio signal processing.

* Gm5921HLF : - Scaler IC.

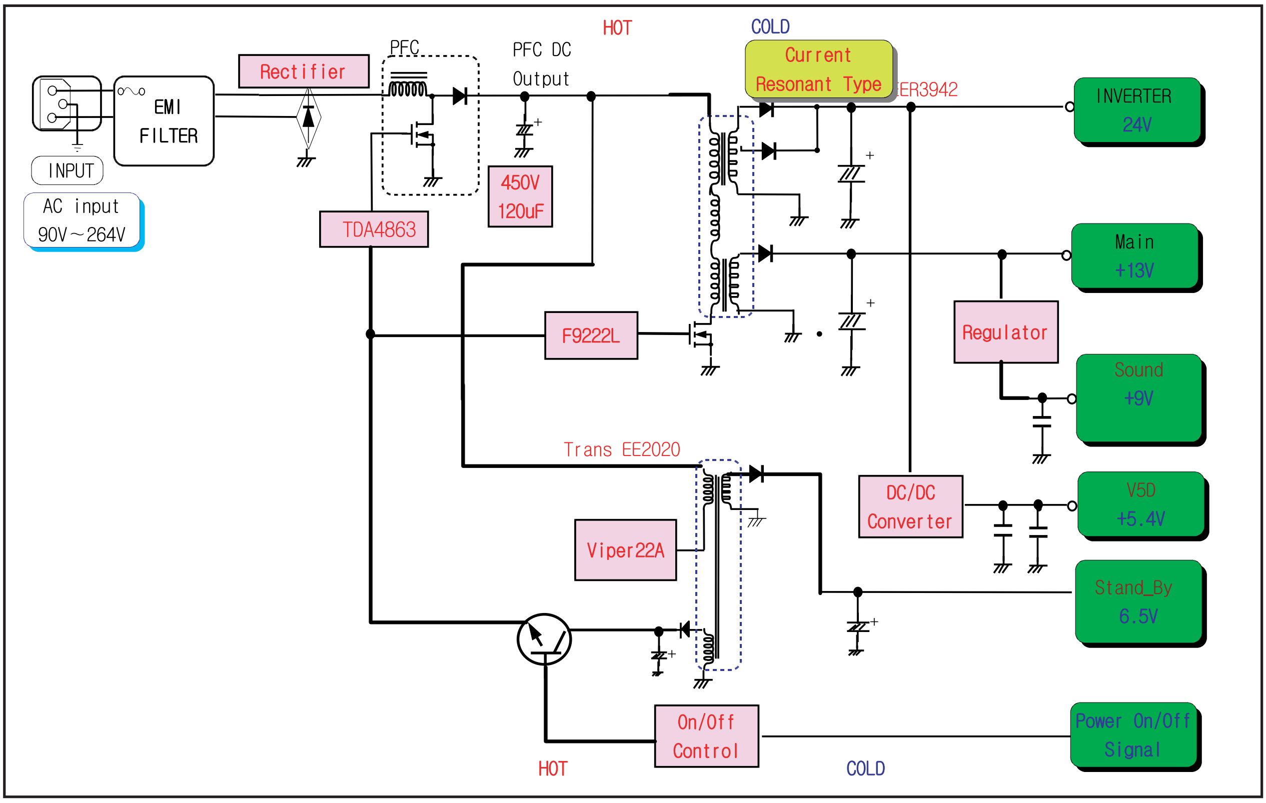
- Component, Pc, DVI-D input and LVDS signal output.

13-3 SMPS Board

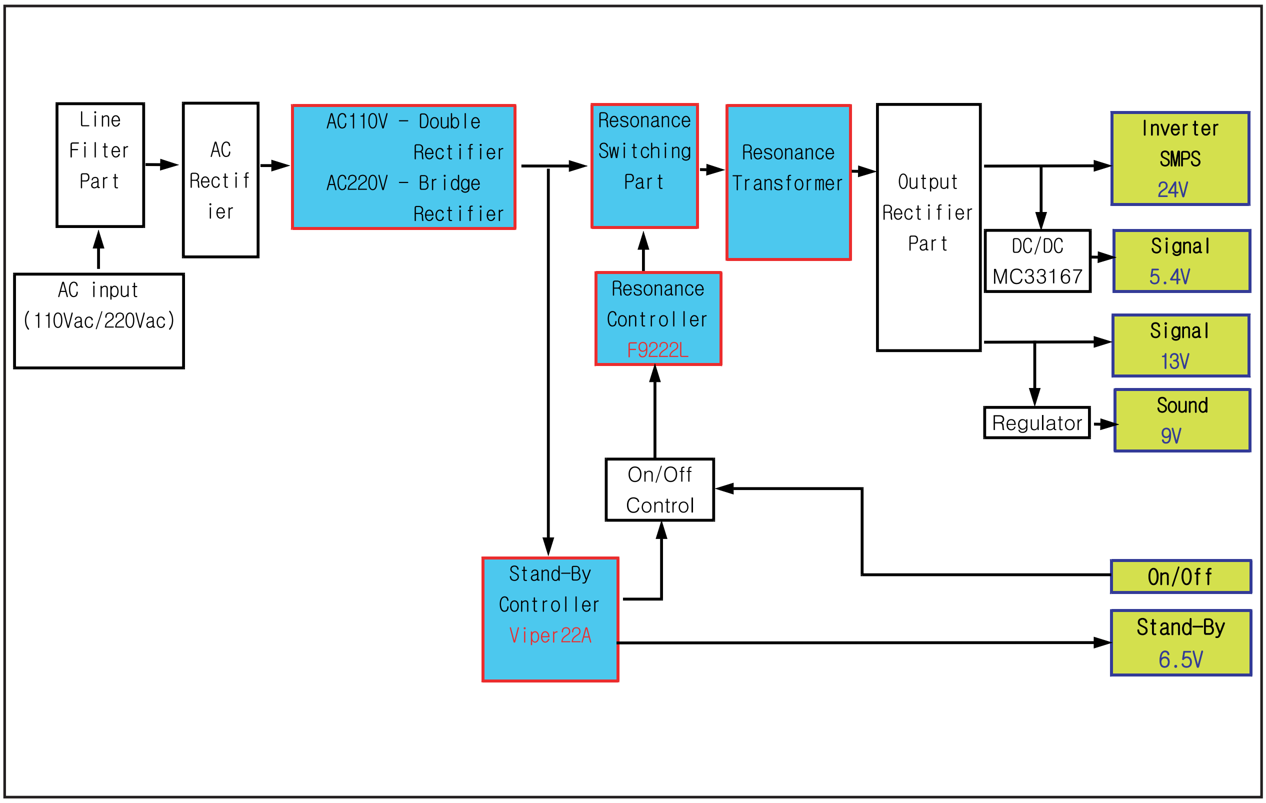
13-3-1 23" SMPS Block(Free_Volt)



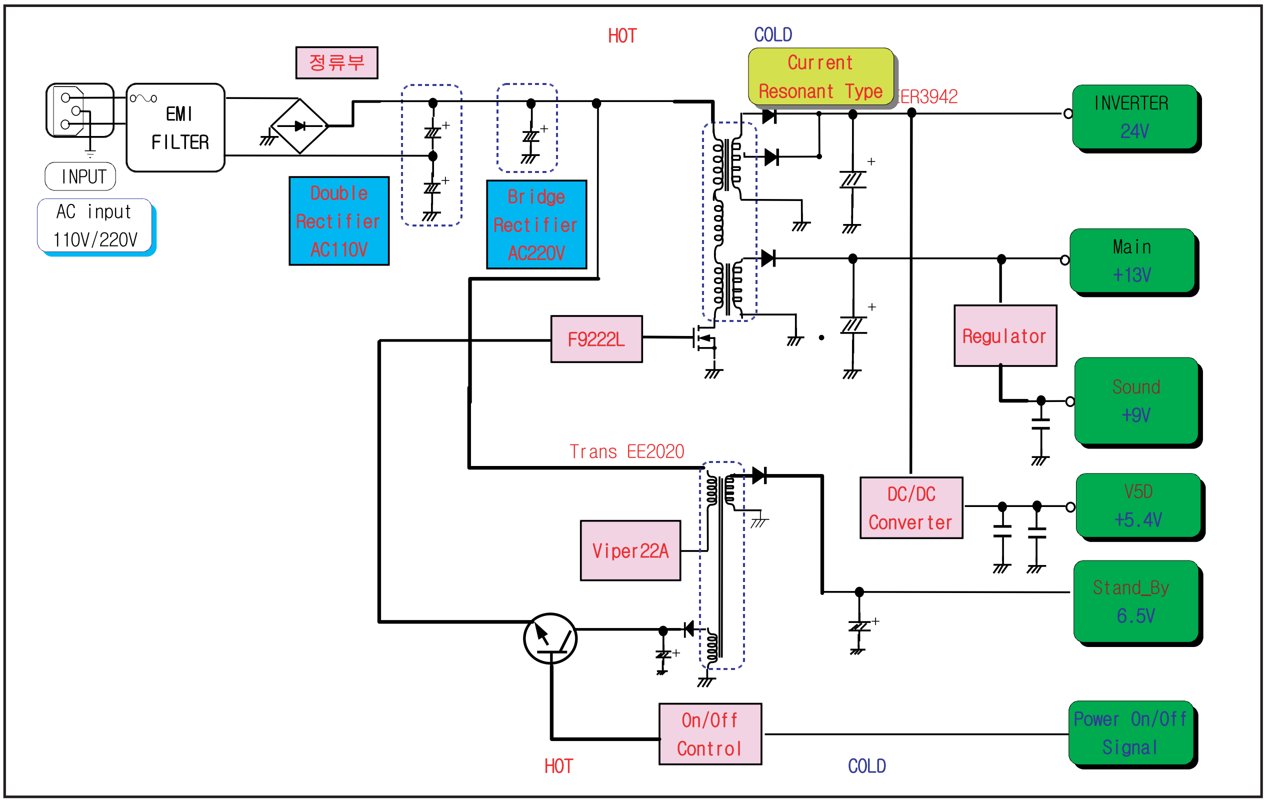
13-3-2 23" SMPS Diagram(Free_Volt)



13-3-3 23" SMPS Block(110V / 220V Only)

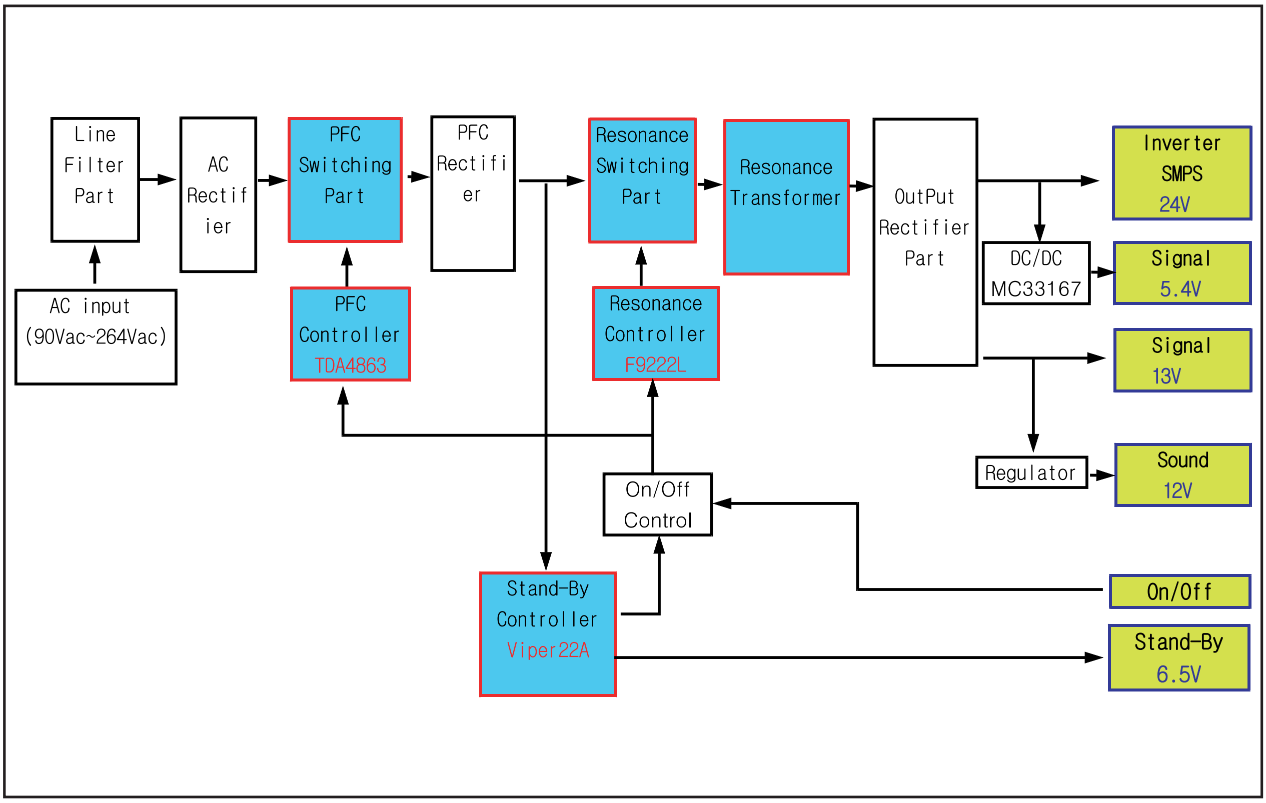


13-3-4 23" SMPS Diagram(110V / 220V Only)

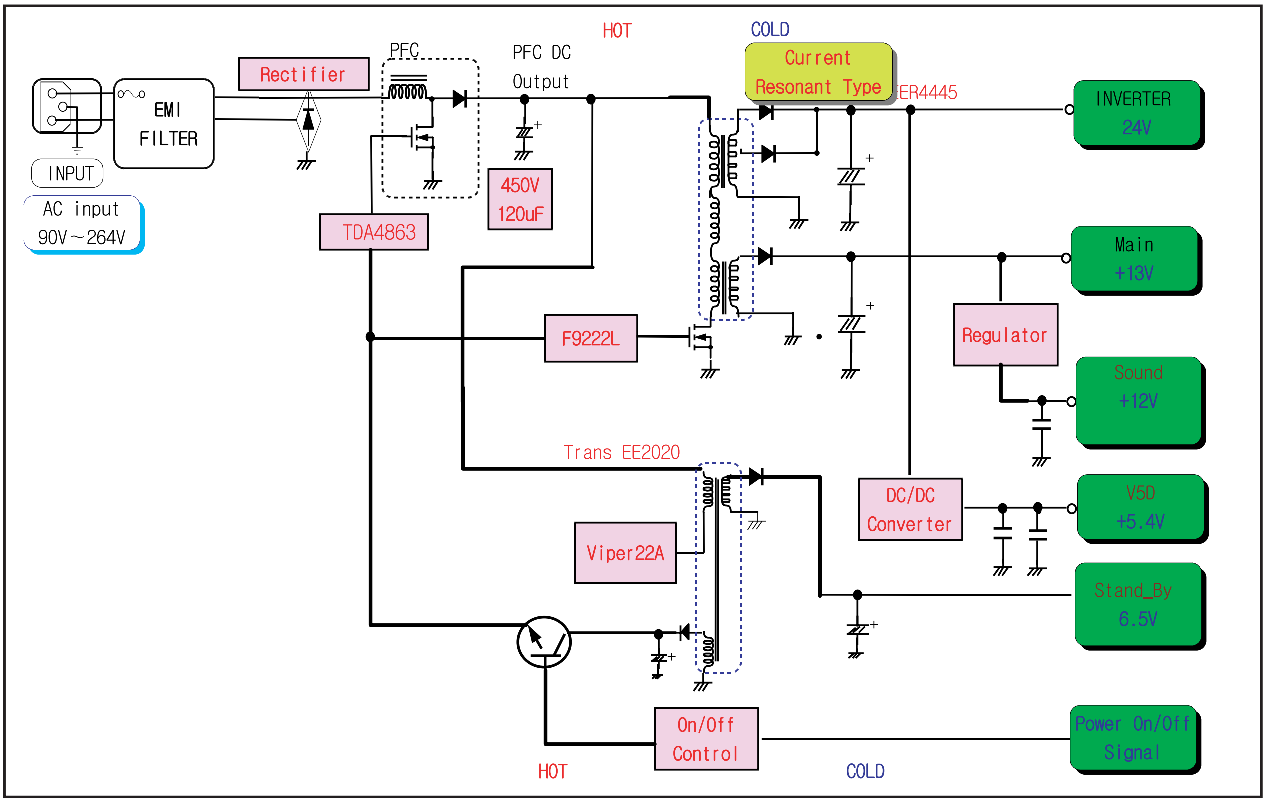


Output Name	Output Voltage			Output Current				Load Characteristics	PCB Loc.	Usage	Remark
	Nominal	Regulation (%)	Variable Range	Min	Typical	Peak					
24V	24.5V	± 4	23.52V ~ 25.48V	0.1A	3.0A	4.0A		Pulsating	Main B'D	Drive	-
5.4V	5.4V	± 5	5.13V ~ 5.67V	0.1A	3.0A	5.0A		Constant	Main B'D	Drive, Logic, Buffer, Image Digital	-
13V	12.7V	± 7	11.9V ~13.7V	0.01A	0.3A	0.5A		Constant	Main B'D	Image Analog	-
Vamp	9.2V	± 4	8.83V ~ 9.57V	0.01A	0.3A	1.1A		Constant	Main B'D	Sound	-
ST-BY	8.0V		5.58V ~ 8.5V	0.1A	0.3A	0.6A		Constant	Main B'D	Stand-by	-

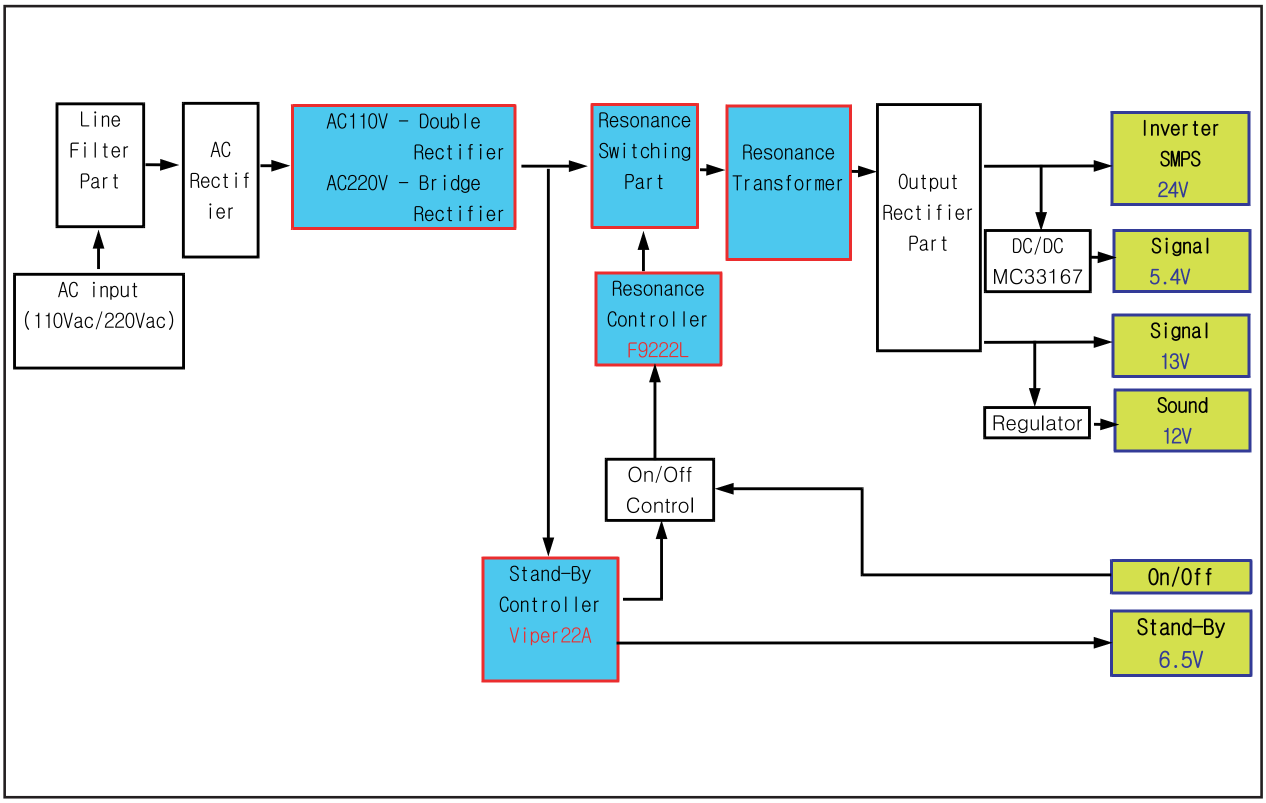
13-3-5 27" SMPS Block(Free_Volt)



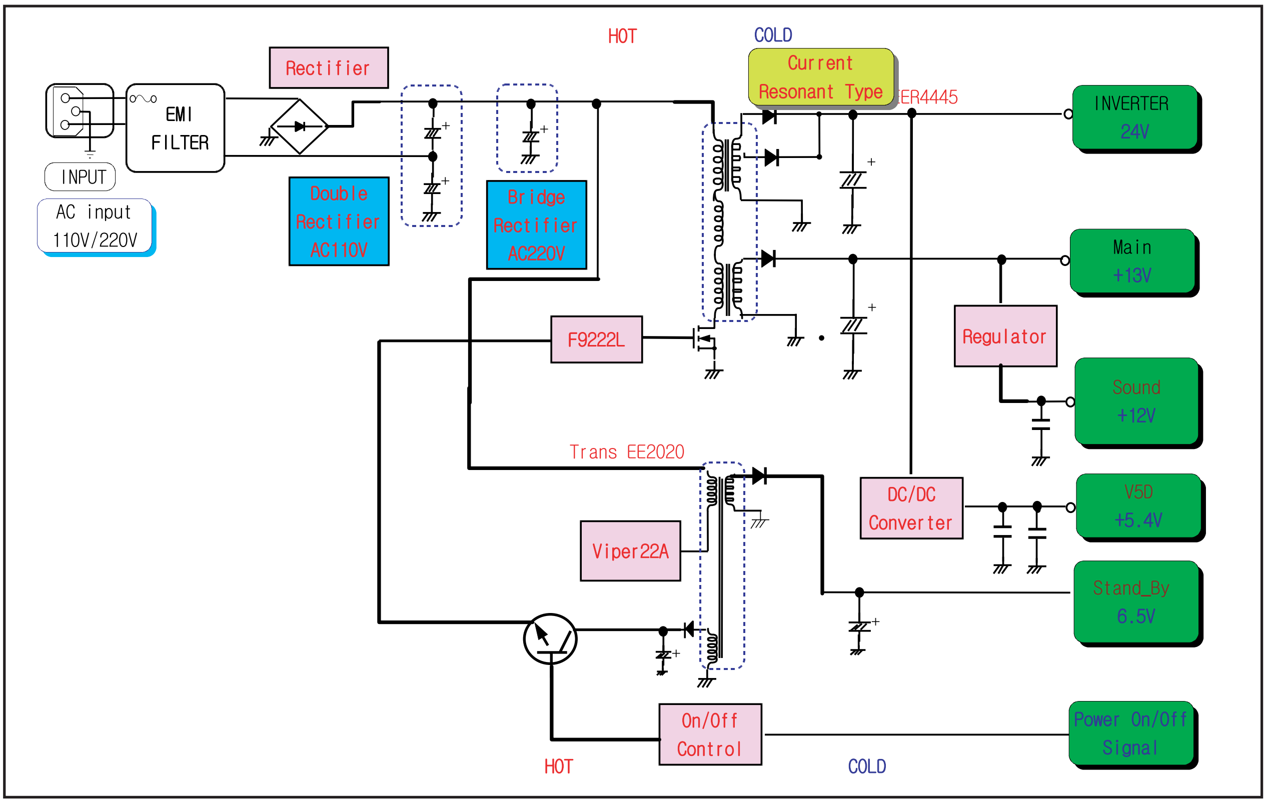
13-3-6 27" SMPS Diagram(Free_Volt)



13-3-7 27" SMPS Block(110V / 220V Only)

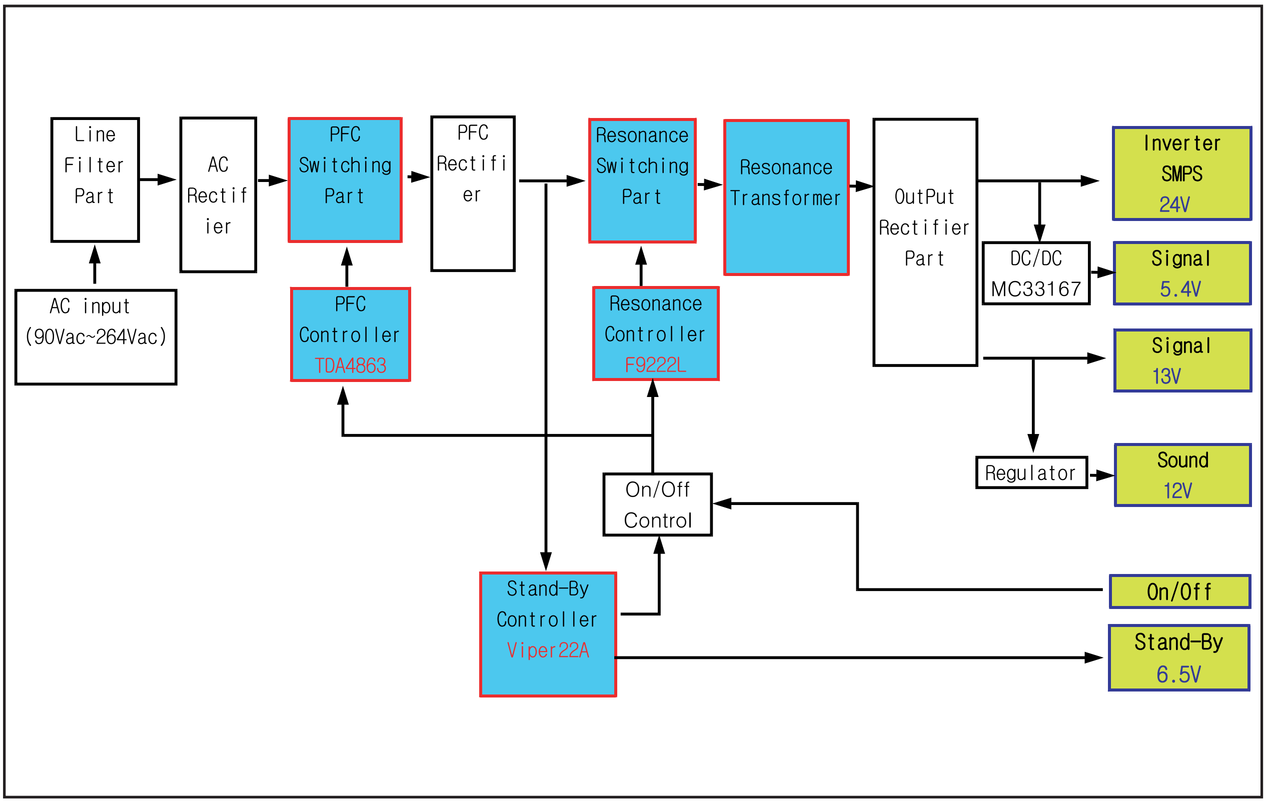


13-3-8 27" SMPS Diagram(110V / 220V Only)

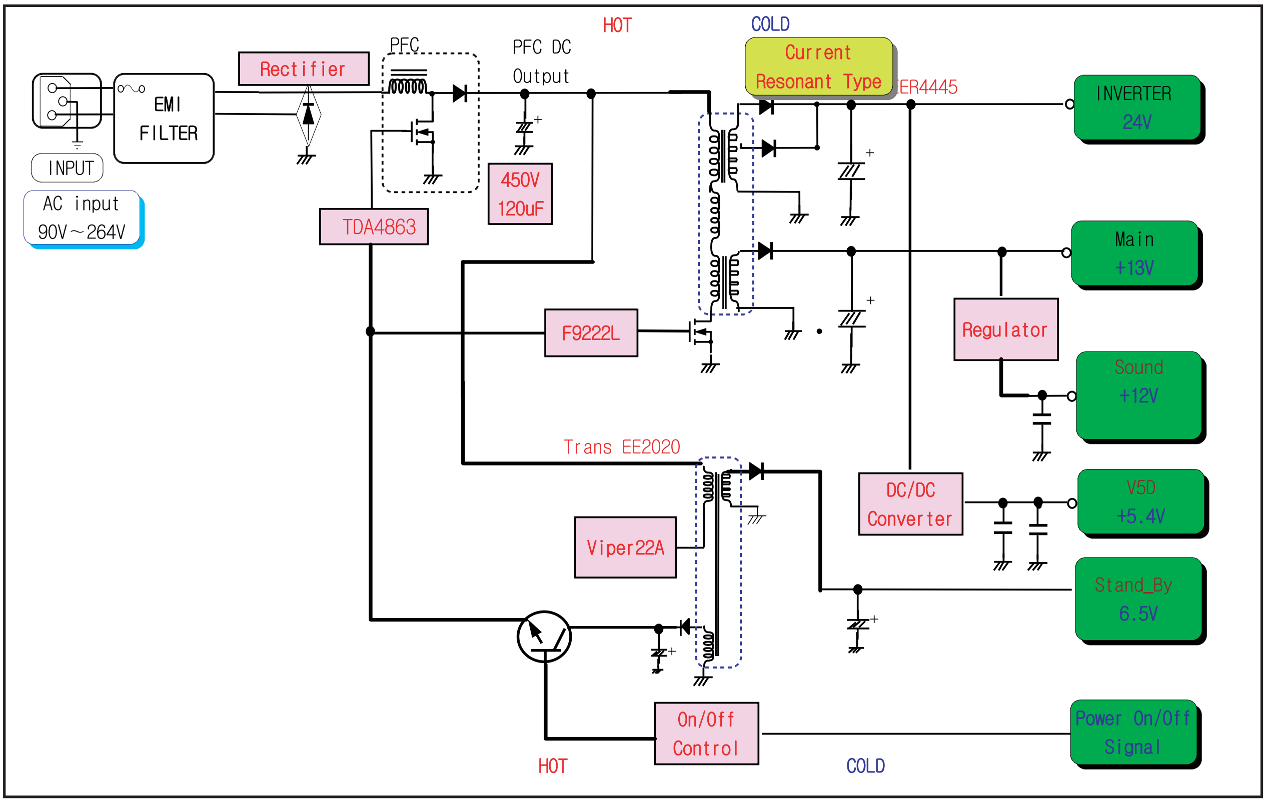


Output Name	Output Voltage			Output Current			Load Characteristics	PCB Loc.	Usage	Remark
	Nominal	Regulation (%)	Variable Range	Min	Typical	Peak				
24V	24.5V	± 4	23.52V ~ 25.48V	0.1A	4.0A	6.0A	Pulsating	Main B'D	Drive	-
5.4V	5.4V	± 5	5.13V ~ 5.67V	0.1A	4.0A	5.0A	Constant	Main B'D	Drive, Logic, Buffer, Image Digital	-
13V	12.7V	± 7	11.9V ~13.7V	0.01A	0.3A	0.5A	Constant	Main B'D	Image Analog	-
Vamp	12.0V	± 4	11.52V ~ 12.5V	0.01A	0.3A	3.0A	Constant	Main B'D	Sound	-
ST-BY	8.0V		5.58V ~ 8.5V	0.01A	0.3A	0.6A	Constant	Main B'D	Stand-by	-

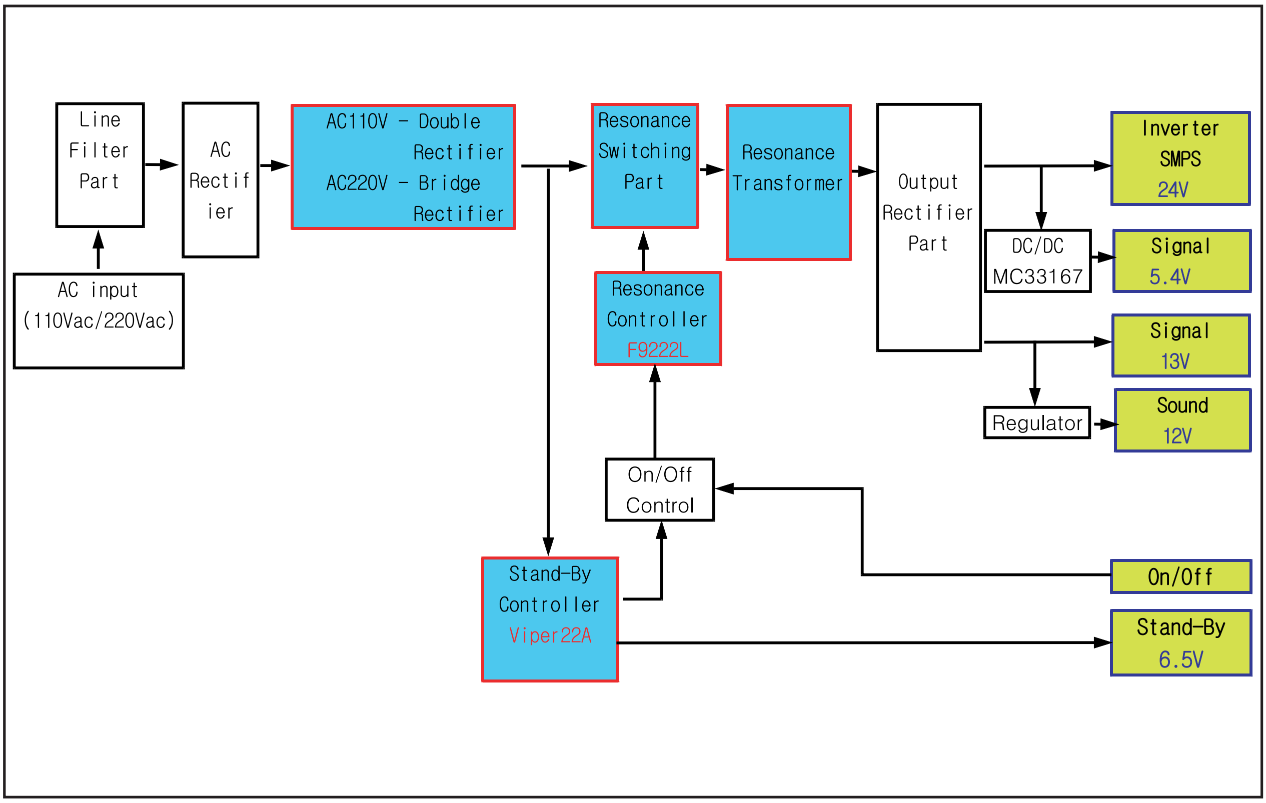
13-3-9 32" SMPS Block(Free_Volt)



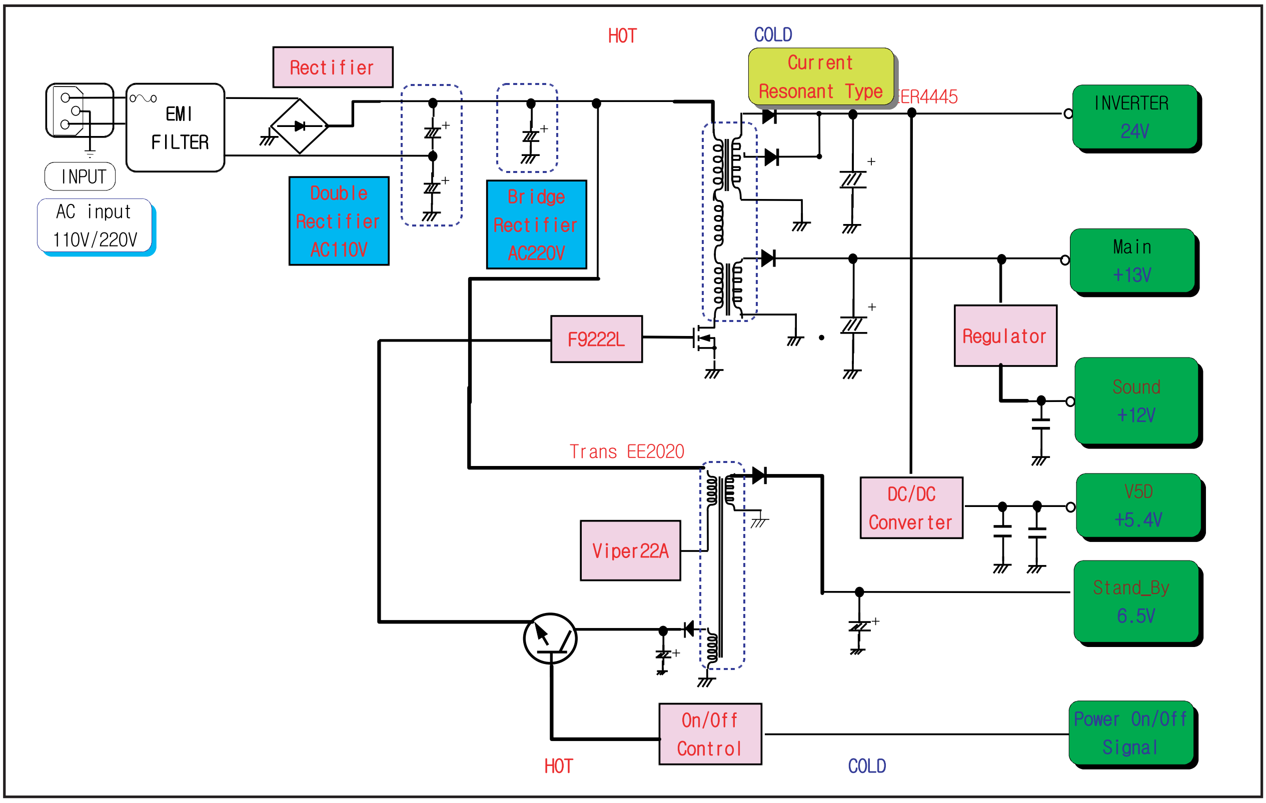
13-3-10 32" SMPS Diagram(Free_Volt)



13-3-11 32" SMPS Block(110V / 220V Only)



13-3-12 32" SMPS Diagram(110V / 220V Only)



Output Name	Output Voltage			Output Current				Load Characteristics	PCB Loc.	Usage	Remark
	Nominal	Regulation (%)	Variable Range	Min	Typical	Peak					
24V	24.5V	± 4	23.52V ~ 25.48V	0.1A	5.0A	8.0A		Pulsating	Main B'D	Drive	-
5.4V	5.4V	± 5	5.13V ~ 5.67V	0.1A	4.0A	5.0A		Constant	Main B'D	Drive, Logic, Buffer, Image Digital	-
13V	12.7V	± 7	11.9V ~13.7V	0.01A	0.3A	0.5A		Constant	Main B'D	Image Analog	-
Vamp	12.0V	± 4	11.52V ~ 12.5V	0.01A	0.5A	2.5A		Constant	Main B'D	Sound	-
ST-BY	8.0V		5.58V ~ 8.5V	0.1A	0.3A	0.6A		Constant	Main B'D	Stand-by	-

14 Reference Infomation

14-1 Technical Terms

- TFT-LCD
(Thin film Transistor Liquid Crystal Display)
ADC(Analog to Digital Converter)
This is a circuit that converts from analog signal to digital signals.

- PLL(Phase Locked Loop)
During progressing ADC, Device makes clock synchronizing HSYNC with Video clock

- Inverter
Device that supply Power to LCD panel lamp. this device gernerate about 1,500~2,000V.

- AC Adapter
Device that converts AC(90V~240V) to DC(+12V or 14V)

- SMPS(Switching Mode Power Supply)
Switching Mode Power supply. This design technology is used to step up/down the input power by switching on/off

- FRC(Frame Rate Controller)
Technology that change image frame quantity displayed on screen for one second.
Actually TFT-LCD panel require 60 pcs of frame for one second.
so,this technology is needed to convert input image to 60 pcs regardless input frame quantity.

- Image Scaler
Technology that convert various input resolution to other resolution.(ex. 640* 480 to 1024*768)

- Auto Configuration(Auto adjustment)
This is an algorithm to adjust monitor to optimum condition by pushing one key.

- OSD(On Screen Display)
On screen display. customer can control the screen easily with this.

- Image Lock
This means "Fineness adjustment " in LCD Monitor, the features are "Fine" and "Coarse"

- FINE
"Fine" adjustment is used to adjust visibility by control phase difference.

- COARSE
This is a adjustment by tuning with Video colck and PLL clock.

- DVI (Digital Visual Interface)
This provides a high speed digital connection for visual data types that is display technology independent. this interface is primarily forcused at providing a connection between a computer and its display device.

- L.V.D.S.(Low Voltage Differential Signaling)
a kind of transmission method for Digital.It can be used from Main PBA to Panel.

- DVI (Digital Visual Interface)
This provides a high speed digital connection for visual data types that is display technology independent. this interface is primarily forcused at providing a connection between a computer and its display device.

- T.M.D.S
(Transition minimized Differential Signaling)
a kind of transmission method for Digital.
It can be used from Video card to Main PBA.

- DDC(Display data channel)
It is a communication method between Host Computer and related equipment.
It can make it Plug and Play between PC and Monitor.

- EDID
Extended Display Identification Data PC can recognize the monitor information as Product data, Product name,Display mode,Serial number and Signal source,etc through DDC Line communicating with PC and Monitor.

- Dot Pitch
The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

- Vertical Frequency
The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit: Hz
Example: If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

- Horizontal Frequency
The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

- Interlace and Non-Interlace Methods
Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

- **Plug & Play**
This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

- Resolution
The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.
Example: If the resolution is 1280 x 1024 , this means the screen is composed of 1280 horizontal dots (horizontal resolution) and 1024 vertical lines (vertical resolution).

- BTSC
Broadcast Television System Committee
The stereo broadcasting system that is used in most of the countries that have adopted the NTSC system, including the United States, Canada, Chile, Venezuela and Taiwan. It also refers to the organization that has been organized to promote its development and management.

- EIAJ
Electronic Industries Association of Japan.

- RF Cable
A round signal cable generally used for TV antennas.

- Satellite Broadcasting
Broadcasting service provided via satellite. Enables high picture quality and clear sound throughout the country regardless of the location of the viewer.

- Sound Balance
Balances the levels of the sound coming from each speaker in televisions with two speakers.

- Cable TV
Whereas the terrestrial broadcasting is delivered via frequency signals through the air, cable broadcasting is transmitted via a cable network. In order to view cable TV, one must purchase a cable receiver and hook it up to the cable network.

- CATV
"CATV" refers to the broadcasting service offered at hotels, schools and other buildings through their own broadcasting system, apart from VHF or UHF broadcasting by terrestrial broadcasters. The CATV programs may include movies, entertainment and educational programs. (Different from cable TV.)

CATV can be viewed only within the area in which the CATV service is offered.

- S-Video
Short for "Super Video." S-Video allows up to 800 lines of horizontal resolution, enabling high-quality video.

- VHF/UHF
VHF indicates TV channels 2 to 13, and UHF indicates channels 14 through 69.

- Channel Fine Tuning
This feature allows the viewer to fine-tune the TV channel to obtain the best viewing conditions. The Samsung LCD TV has both automatic and manual channel fine-tuning features to enable the viewer to adjust their desired settings.

- External Device Input
External device input refers to video input from such external video devices as VCRs, camcorders and DVD players, separate from a TV broadcast.

14-2 Pin Assignments

14-2-1 DVI-D

Sync Type / Pin No.	24P DVI-D		
1	Rx2-	13	NC
2	Rx2+	14	DDC Input power (+5V)
3	GND	15	IDENT-DVI
4	NC	16	Output Signal (HDCP Control)
5	NC	17	Rx0-
6	DDC - SCL	18	Rx0+
7	DDC - SDA	19	GND
8	NC	20	NC
9	Rx1-	21	NC
10	Rx1+	22	GND
11	GND	23	RxC+
12	NC	24	RxC-

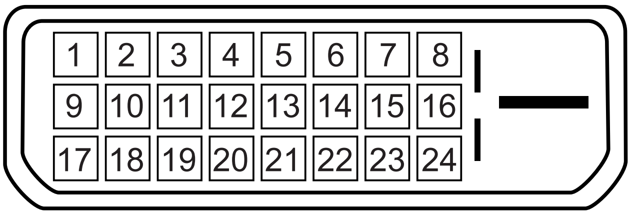


Figure 1.

14-2-2 Component

RCA Green	Y
	GND
RCA Blue	Pb (Cb)
	GND
RCA Red	Pr (Cr)
	GND
RCA White	Audio L
	GND
RCA Red	Audio R
	GND

14-2-3 S-Video

Pin	Separate
1	GND
2	Y
3	C
4	GND
5	GND

14-2-4 A/V

RCA Yellow	CVBS
RCA White	Audio L
	GND
RCA Red	Audio R
	GND

14-2-5 D-SUB

Pin	Separate
1	Red
2	Green
3	Blue
4	GND
5	GND
6	GND Red
7	GND Green
8	GND Blue
9	DDC Input power(+5V)
10	IDENT PC
11	GND
12	DDC Data(SDA)
13	H SYNC
14	V SYNC
15	DDC Clock(SCL)

14-2-6 PC Display mode

Both screen position and size will vary depending on the type of PC monitor and its resolution.

The resolutions in the table are recommended. (All resolutions between the supported limits are supported)

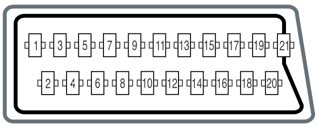
Mode	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock Frequency (MHz)	Sync Polarity (H/V)
IBM	640 x 480	31.469	59.940	25.175	- / -
	720 x 400	31.469	70.087	28.322	- / +
VESA	640 x 480	37.861	72.809	31.500	- / -
	640 x 480	37.500	75.000	31.500	- / -
	800 x 600	37.879	60.317	40.000	+ /+
	800 x 600	48.077	72.188	50.000	+ /+
	800 x 600	46.875	75.000	49.500	+ /+
	1024 x 768	48.364	60.000	65.000	- / -
	1024 x 768	56.476	70.069	75.000	- / -
	1024 x 768	60.023	75.029	78.750	+ /+
	1360 x 768	47.712	60.015	85.800	+ /+

- The interlace mode is not supported.

- The set might operate abnormally if a non-standard video format is selected.

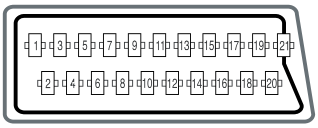
- DVI dose not support PC function.

14-2-7 Scart 1



Pin	Signal	Pin	Signal
1	Audio output R	12	NC
2	Audio input R	13	Video GND (RGB red)
3	Audio output L	14	GND
4	Audio common GND	15	RGB red input
5	Video GND (RGB blue)	16	Fast Blanking signal (RGB switching)
6	Audio input L	17	Video output GND
7	RGB blue input	18	Video input GND
8	Switching voltage	19	Video output (CVBS out)
9	Video GND (RGB green)	20	Video input (CVBS in)
10	NC	21	Common GND
11	RGB green input		

14-2-8 Scart 2



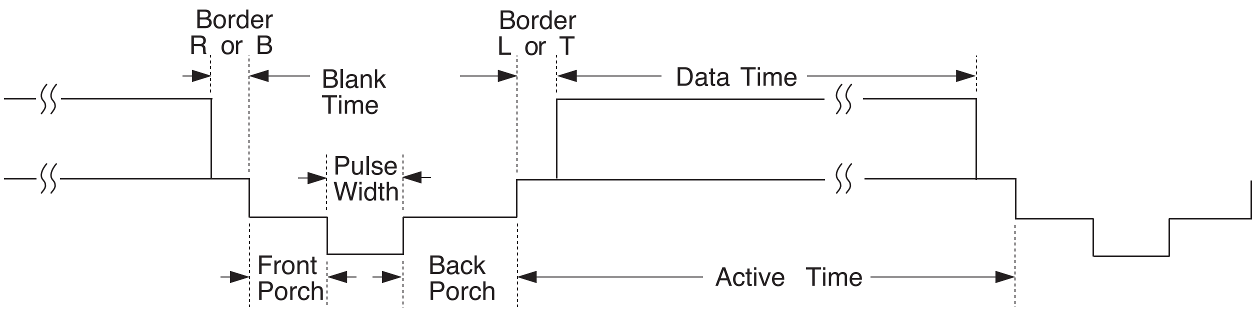
Pin	Signal	Pin	Signal
1	Audio output R	12	NC
2	Audio input R	13	Video GND (RGB red)
3	Audio output L	14	GND
4	Audio common GND	15	RGB red input
5	Video GND (RGB blue)	16	NC
6	Audio input L	17	Video output GND
7	RGB blue input	18	Video input GND
8	Switching voltage	19	Video output (CVBS out)
9	Video GND (RGB green)	20	Video input (CVBS in)
10	NC	21	Common GND
11	RGB green input		

14-3 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

14-3-1 LCD Panel Mode1 mode

Timing No.	LTA400W2
Originator	VESA
Mode Name	1366/60Hz
Resolution (HxV)	1366x768
HORIZONTAL	
Frequency	47.712kHz
Total time	20.959µs
Active time	15.906µs
Blank time	5.053µs
Border(L / R)	0.000µs
Data time	15.906µs
Front porch	0.749µs
Sync. width	1.702µs
Back porch	2.994µs
Sync. polarity	Positive
VERTICAL	
Frequency	60.015Hz
Total time	16.662ms
Active time	16.097ms
Blank time	0.566ms
Border(T / B)	0.000ms
Data time	16.097ms
Front porch	0.063ms
Sync. width	0.105ms
Back porch	0.377ms
Sync polarity	Positive
Dot Clock	85.500MHz
Sync. Type	Separate
Scan Type*	N/I



14-3-2 Supported Modes (1)

Timing No. Origniator Mode Name Resolution (HxV)	2 IBM VGA2 720x400	3 IBM VGA3 640x480	11 VESA 640/72Hz 640x480	17 VESA 640/75Hz 640x480	32 MAC 640/67Hz 640x480
HORIZONTAL					
Frequency	31.469kHz	31.469kHz	37.861kHz	37.500kHz	35.000kHz
Total time	31.777µs	31.778µs	26.413µs	26.667µs	28.571µs
Activetime	26.058µs	26.058µs	20.825µs	20.317µs	21.164µs
Blank time	5.720µs	5.720µs	5.588µs	6.350µs	7.407µs
Border(L / R)	0.318µs	0.318µs	0.254µs	0.000µs	0.000µs
Data time	25.422µs	25.422µs	20.317µs	20.317µs	21.164µs
Front porch	0.318µs	0.318µs	0.508µs	0.508µs	2.116µs
Sync. width	3.813µs	3.813µs	1.270µs	2.032µs	2.116µs
Back porch	1.589µs	1.589µs	3.810µs	3.810µs	3.175µs
Sync. polarity	Negative	Negative	Negative	Negative	Negative
VERTICAL					
Frequency	70.087Hz	59.940Hz	72.809Hz	75.000Hz	66.667Hz
Total time	14.268ms	16.683ms	13.735ms	13.333ms	15.000ms
Active time	13.155ms	15.761ms	13.100ms	12.800ms	13.714ms
Blank time	1.113ms	0.922ms	0.635ms	0.533ms	1.286ms
Border(T/B)	0.222ms	0.254ms	0.211ms	0.000ms	0.000ms
Data time	12.711ms	15.253ms	12.678ms	12.800ms	13.714ms
Front porch	0.191ms	0.064ms	0.026ms	0.027ms	0.086ms
Sync. width	0.064ms	0.064ms	0.079ms	0.080ms	0.086ms
Back porch	0.858ms	0.794ms	0.528ms	0.427ms	1.114ms
Sync polarity	Positive	Negative	Negative	Negative	Negative
Dot Clock	28.322MHz	25.175MHz	31.500MHz	31.500MHz	30.240MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type*	N/I	N/I	N/I	N/I	N/I

14-3-3 Supported Modes (2)

Timing No. Originator Mode Name Resolution (HxV)	13 VESA 800/60Hz 800x600	14 VESA 800/72Hz 800x600	18 VESA 800/75Hz 800x600
HORIZONTAL Frequency Total time Active time Blank time Border(L / R) Data time Front porch Sync. width Back porch Sync. polarity	 37.879kHz 26.400µs 20.000µs 6.400µs 0.000µs 20.000µs 1.000µs 3.200µs 2.200µs Positive	 48.077kHz 20.800µs 16.000µs 4.800µs 0.000µs 16.000µs 1.120µs 2.400µs 1.280µs Positive	 46.875kHz 21.333µs 16.162µs 5.171µs 0.000µs 16.162µs 0.323µs 1.616µs 3.232µs Positive
VERTICAL Frequency Total time Active time Blank time Border(T/B) Data time Front porch Sync. width Back porch Sync polarity	 60.317Hz 16.579ms 15.840ms 0.739ms 0.000ms 15.840ms 0.026ms 0.106ms 0.607ms Positive	 72.188Hz 13.853ms 12.480ms 1.373ms 0.000ms 12.480ms 0.770ms 0.125ms 0.478ms Positive	 75.000Hz 13.333ms 12.800ms 0.533ms 0.000ms 12.800ms 0.021ms 0.064ms 0.448ms Positive
Dot Clock	40.000MHz	50.000MHz	49.500MHz
Sync. Type Scan Type*	Separate N/I	Separate N/I	Separate N/I

14-3-4 Supported Modes (3)

Timing No. Originator Mode Name Resolution (HxV)	15 VESA 1024/60Hz 1024x768	16 VESA 1024/70Hz 1024x768	19 VESA 1024/75Hz 1024x768	 VESA 1360/60Hz 1360x768
HORIZONTAL				
Frequency	48.363kHz	56.476kHz	60.023kHz	47.712kHz
Total time	20.677µs	17.707µs	16.660µs	20.959µs
Active time	15.754µs	13.653µs	13.003µs	15.906µs
Blank time	4.923µs	4.053 µs	3.777 µs	5.053µs
Border(L / R)	0.000µs	0.000µs	0.000µs	0.000µs
Data time	15.754µs	13.653µs	13.003µs	15.906µs
Front porch	0.369µs	0.320µs	0.323µs	0.749µs
Sync. width	2.092µs	1.813µs	1.219µs	1.702µs
Back porch	2.462µs	1.920µs	2.235µs	2.994µs
Sync. polarity	Negative	Negative	Positive	Positive
VERTICAL				
Frequency	60.004Hz	70.069Hz	75.029Hz	60.015Hz
Total time	16.666ms	14.272ms	13.328ms	16.662ms
Active time	15.880ms	13.599ms	12.795ms	16.097ms
Blank time	0.786ms	0.672ms	0.533ms	0.566ms
Border(T / B)	0.000ms	0.000ms	0.000ms	0.000ms
Data time	15.880ms	13.599ms	12.795ms	16.097ms
Front porch	0.062ms	0.053ms	0.017ms	0.063ms
Sync. width	0.124ms	0.106ms	0.050ms	0.105ms
Back porch	0.600ms	0.513ms	0.466ms	0.377ms
Sync polarity	Negative	Negative	Positive	Positive
Dot Clock	65.000MHz	75.000MHz	78.750MHz	85.500MHz
Sync. Type	Separate	Separate	Separate	Separate
Scan Type*	N/I	N/I	N/I	N/I

14-4 Panel Description

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LT140X1-002	BN07-00004A	SA	BN68-00239H	-
SEC	LT150XS-L01	BN07-00009A	SB		-
SEC	LT150XS-L01-B	BN07-00022A	SC		-
SEC	LTM150XS-L02	BN07-00005A	SD		-
SEC	LT181E2-132	BN07-00001A	SE		-
SEC	LT150XS-T01	BN07-00010A	SF		-
SEC	LTM181E3-132	BN07-00019A	SG		-
SEC	LT170E2-131	BN07-10001D	SH		-
SEC	LT181E2-131	BN07-10001E	SJ		-
SEC	LTM170E4-L01	BN07-00018A	SK		-
SEC	LTM240W1-L01	BN07-00015A	SL		-
SEC	LTM213U3-L01	BN07-00016A	SM		-
SEC	LTM150XH-L01	BN07-00026A	SN		-
SEC	LTM150XH-L03	BN07-00027A	SP		-
SEC	LTM150XS-L01	BN07-00032A	SQ		DELL(ZPD)
SEC	LTM181E4-L01	BN07-00034A	SR		PVA
SEC	LTM170EH-L01	BN07-00036A	SS		TN
SEC	LTM170E5-L01	BN07-00037A	SU		PVA
SEC	LTM150XH-L11	BN07-00041A	SV		-
SEC	LTM213U4-L01	BN07-00039A	SW		PVA
SEC	LTM150XH-L01(ZPD)	BN07-00045A	SX		ZPD
SEC	LTM150XH-L04	BN07-00046A	SY		"New panel with high brightness"
SEC	LTM170W1-L01	BN07-00047A	SZ		Panel for TV
SEC	LTM150XH-L06	BN07-00053A	EA		Panel for TV/ High luminance for 450cd _ SONY&EOS Team Panel for TV
SEC	LTM153W1-L01	BN07-00054A	EB		Use NIKE MODEL
SEC	LTM170EH-L05	BN07-00055A	EC		Panel EOS proj. for high brightness of 17" EH-L05
SEC	LTM170E5-L03	BN07-00056A	ED		Dell 1702FP pro. E4. EH mechanicalCompatible
SEC	LTM190E1-L01	BN07-00057A	EE		DELL 1900 FP
SEC	LTM181E5-L01	BN07-00061A	EF		18" narrow bezel GH18PS
SEC	LTM150XP-L01	BN07-00065A	EG		AMLCD PVA PANEL
SEC	LTM240W1-L02	BN07-00062A	EH		Panel for 15" Wide TV
SEC	LTM170EU-L01	BN07-00071A	EJ		Slim design, TN
SEC	LTM170E5-L04	BN07-00072A	EK		E5-L04 6 bits FRC... for IBM
SEC	LTA220W1-L01	BN07-00074A	EL		Panel for 22" TV
SEC	LTM170E6-L02	BN07-00075A	EM		AMLCD Narrow & slim design 17" PVAmode
SEC	LTM170W1-L01	BN07-00082A	EN		LTM170W1-L01 ZPD panel
SEC	LTM170EH-L01	BN07-00080A	EP		LTM170EH-L01 ZPD panel
SEC	LTM170E5-L01	BN07-00081A	EQ		LTM170E5-L01 ZPD panel
SEC	LTM170EH-L05	BN07-00083A	ER		LTM170EH-L05 ZPD panel
SEC	LTM170E5-L03	BN07-00084A	ES		LTM170E5-L03 ZPD panel
SEC	LTM170EU-L01	BN07-00085A	ET		LTM170EU-L01 ZPD panel
SEC	LTM170E5-L04	BN07-00086A	EU		LTM170E5-L04 ZPD panel
SEC	LTM170E6-L02	BN07-00087A	EV		LTM170E6-L02 ZPD panel
SEC	LTM150XH-L06	BN07-00091A	EW		"Color coordinates change for LCD TV"
SEC	LTM153W1-L01	BN07-00092A	EX		AMLCD WIDE 15",9/10
SEC	LTM170W1-L01	BN07-00100A	EY		"Color Coordinates change code management"
SEC	LTM170EH-L05	BN07-00097A	EZ		"LTM170E5-L05 Color Coordinates Change Panel Code"
SEC	LTA400W1-L01	BN07-00109A	S1		"PANEL of AMLCD 40"" TV"
SEC	LTM153W1-L01	BN07-00110A	S2		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM150XH-L06	BN07-00111A	S3		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM170W1-L01	BN07-00112A	S4		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM170EH-L05	BN07-00113A	S5		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LTM220W1-L01	BN07-00114A	S6		"ZPD Panel for AMLCD 22"" TV"
SEC	LTM150XH-L06	BN07-00117A	S7		"ZPD Panel code"
SEC	LTM153W1-L01	BN07-00118A	S8		"ZPD Panel code"
SEC	LTM170WP-L01	BN07-00119A	S9		"PVA Panel for NIKE"
SEC	LTM213U4-L01	BN07-00039A	E1		21.3" NARROW
SEC	LTA260W1-L01	BN07-00121A	E2		VENUS
SEC	LTA220W1-L01	BN07-00074B	E3		"Panel B-level panel code for 22"" TV Panel "
SEC	LTA320W1-L01	BN07-00108A	E4		"Panel for AMLCD 32"" TV"
SEC	LTM213U4-L01	BN07-00124A	E5		NARROW BEZEL 21 " PANEL
SEC	LTM170E6-L04	BN07-00129A	E6		"HIGHLAND 17"" LOW PANEL (Panel only for TCO03)"
SEC	LTM190E1-L01	BN07-00088A	E7		LTM190E1-L01 ZPD panel
SEC	M150X4-L06	BN07-00137A	E8		15" Narrow & Slim panel
SEC	LTA170V1	BN07-00139A	E9		"17"" Panel for Muse 4:3 VGA TV"
SEC	LTM190E1-L02	BN07-00128A	E10		"New Panel from AMLCDl, Specification : 6bit Driver IC"
SEC	LTM170EX-L01	BN07-00143A	E11		"Development new Panel from AMLCD"
SEC	LTM170E8-L01	BN07-00144A	E12		"Development new Panel from AMLCD"
SEC	LTM170E6-L04	BN07-00129B	E13		"ZPD panel for AMLCD (Panel only for TCO03)"
SEC	LTA320W1-L02	BN07-00108B	E14		"Creat B-level Panel code for AMLCD 32"" TV"
SEC	LTM190E1-L03	BN07-00151A	E15		"Development new 19"" Panel form AMLCD (Panel only for TCO03)"
SEC	LTM240W1-L03	BN07-00134A	E16		"AMLCD 24"" panel development"
SEC	LTM190E1-L02	BN07-00128B	E17		"New Panel from AMLCD, Specification : 6bit Driver IC(ZPD)"
SEC	LTM190E4-L01	BN07-00145A	E18		"AMLCD 24"" new panel development"
SEC	LTM170E8-L01	BN07-00158A	E19		"ZPD code derivation"
SEC	LTM170EX-L01	BN07-00159A	E20		"ZPD code derivation"
SEC	LTM190E1-L03	BN07-00151B	E21		"Creat new panel code for AMLCD 19"" (Panel only for TCO03)"
SEC	LTA460H1-L01	BN07-00157A	E22		"creat panel code for AMLCD 46"" TV "
SEC	LTM170EU-L11	BN07-00160A	E23		"creat new panel code for AMLCD 17"" (Panel only for TCO03)"
SEC	LTM240W1-L03	BN07-00134B	E24		"24"" panel ZPD code derivation"
SEC	LTM190E4-L01	BN07-00145B	E25		"AMLCD 19"" ZPD Panel code derivation"
SEC	LTM240W1-L03	BN07-00134B	E26		24" panel ZPD code derivation
SEC	LTM150XO-L01	BN07-00164A	E27		AMLCD 15" XO-L01 new panel development
SEC	LTM150XO-L01	BN07-00164B	E28		AMLCD 15" XO-L01 ZPD code derivation
SEC	LTM170EU-L11	BN07-00160B	E29		AMLCD 17" NEW panel code derivation
SEC	LTA320W2-L01	BN07-00172A	SPZ		AMLCD 32" NEW panel
SEC	LTM213U4-L01	BN07-00124B	SPZ		21.3" Narrow PANEL ZPD Panel derivation
SEC	LTM170EU-L11	BN07-00189A	STH		AMLCD EU-L11 Pb free panel code derivtion
SEC	LTM170EU-L11	BN07-00189B	STZ		AMLCD EU-L11 Pb free panel ZPD code derivation
SEC	LTM240W1-L04	BN07-00188A	SPH		24" A-DCC new panel development
SEC	LTM190EX-L01	BN07-00191A	STH		AMLCD 19" TN new Panel
SEC	LTM190EX-L02	BN07-00191B	STZ		AMLCD 19" TN new Panel ZPD derivation
SEC	LTA230W1-L02	BN07-00184A	SPZ		AMLCD 23" 16:9 new Panel
SEC	LTA260W2-L01	BN07-00185A	SPZ		AMLCD 26" 16:9 new Panel
SEC	LTM240M1-L01	BN07-00195A	SPH		24" panel with high brightness deveiopment
SEC	LTA400W2-L01	BN07-00186A	SPZ		AMLCD 40" 16:9 new Panel
SEC	LTM150XO-L01	BN07-00197A	STH		AMLCD 15" XO-L01 Pb free panel code
SEC	LTM150XO-L01	BN07-00197B	STZ		AMLCD 15" XO-L01 Pb free panel ZPD code
SEC	LTM170EU-L21	BN07-00202A	STZ		AMLCD EU-L21 ZPD new code derivation
SEC	LTA460W2-L03	BN07-00187A	SPZ		BEETOVEN 46"ZPD new Panel
CPT	CLAA150XG09	BN07-00141A	PA		CPT 15" Monitor new panel development
CPT	CLAA170EA02	BN07-00148A	PB		17" CPT NEW development panel
CPT	CLAA170EA02	BN07-00148B	PC		17" CPT ZPD panel code derivation
CPT	CLAA150XG09	BN07-00141B	PTZ		"CPT 15"" panel ZPD code derivation (GOYA-PJT)"
CPT	CLAA150XP01	BN07-00173A	PTH		CPT 15" PSWG code derivation

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
CPT	CLAA150XP01	BN07-00173B	PTZ		CPT 15" PSWG panel ZPD code
CPT	CLAA170EA07	BN07-00174A	PTH		"CPT 17"" PSWG panel code derivation?
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17""" PSWG type new Panel code"""
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17" PSWG type new Panel code
TOSHIBA	LTM15C419(A)	BN07-00002A	TA		-
TOSHIBA	LTM15C423(B)	BN07-00006A	TB		-
TOSHIBA	LTM18C161	BN07-00008A	TC		-
TOSHIBA	LTM15C443	BN07-00031A	TD		-
TOSHIBA	LTM15C458	BN07-00043A	TE		-
TOSHIBA	LTM15C458S	BN07-00077A	TF		"TSB 15"" high brightness Panel"
TOSHIBA	LTM15C458	BN07-00078A	TG		Toshiba ZPD panel
TOSHIBA	LTM15C458S	BN07-00099A	TH		TSB LTM15C458S (ZPD)
HANNSTAR	HSD150MX41A(A)	BN07-00020A	NA		"TTL type"
HANNSTAR	HSD150MX12	BN07-00030A	NB		"TTL type"
HANNSTAR	HSD170ME13	BN07-00180A	NTH		Hannstar 17" TN new panel development
HANNSTAR	HSD170ME13	BN07-00180B	NTZ		Hannstar 17" TN new panel development ZPD code derivation
TORISAN	TM150XG-22L03(A)	BN07-00021A	RA		-
TORISAN	TM150XG-26L06	BN07-00042A	RB		-
TORISAN	TM181SX-76N01	BN07-00048A	RC		-
TORISAN	TM150XG-26L06	BN07-00059A	RD		15" XGA TN MODE(ZPD)
TORISAN	TM290WX-71N31	BN07-00063A	RE		"RS24NS (TORISAN 29"" NEW PANEL)"
TORISAN	TM396WX-71N31	BN07-00064A	RF		"RS24NS (TORISAN 40"" NEW PANEL)"
TORISAN	TM150XG-26L09	BN07-00073A	RG		"Panel for 15"" TV"
TORISAN	TM150XG-26L10	BN07-00089A	RH		"L10(change except D/IC) ZPD"
TORISAN	TM150XG-26L10	BN07-00090A	RJ		L10 NORMAL
TORISAN	TM190SX-70N01	BN07-00098A	RK		Torisan 19" Panel
TORISAN	TM181SX-76N01	BN07-00106A	RL		ZPD Panel code
TORISAN	TM190SX-70N01	BN07-00107A	RM		ZPD Panel code
TORISAN	TM290WX-71N31	BN07-00115A	RN		"Color Coordinates change panel for TORISAN 29"" TV"
TORISAN	TM396WX-71N31	BN07-00116A	RP,Q		"Color Coordinates change panel for TORISAN 40"" TV"
TORISAN	TM22OWX-71N31	BN07-00125A	RR		"Development TORISAN 22"" TV PANEL (ZPD)"
TORISAN	TM22OWX-71N31	BN07-00127A	RS		"Development TORISAN 22"" TV PANEL (HPD)"
TORISAN	TM396WX-71N32A	BN07-00150A	RT		120V inverter Exclusive panel
TORISAN	TM190SX-70N02	BN07-00154A	RMH		Torisan 6bit panel code Derivation
TORISAN	TM190SX-70N02	BN07-00154B	RMZ		Torisan 6bit panel code Derivation
SHARP	LQ181E1DG11(A)	BN07-10001C	PA		-
SHARP	LQ150X1LW71	BN07-00067A	PB		SHARP 15" PVA PANEL
HITACHI	TX38D12VC0CAA(A)	BN07-00003A	HA		-
HITACHI	TX43DVCOCAB	BN07-00060A	HB		17" SXGA PVA MODE
HITACHI	TX43D15VC0CAB	BN07-00101A	HC		ZPD Panel
HITACHI	TX51D11VC0CAB	BN07-00122A	HD		20.1" NARROW
HITACHI	TX54D11VC0CAB	BN07-00123A	HE		21.3" NARROW
HITACHI	TX80D12VC0CAB	BN07-00169A	HIZ		"Development new panel for Hitachi 32"" TV (ZPD)"
HITACHI	TX54D11VC0CAB	BN07-00123B	HIZ		Hitachi 21.3"ZPD panel
IBM	ITSX94S	BN07-00017A	IA		-
UNIPAC	UM170E0	BN07-00028A	UA		Loaded by cisdba

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
HYUNDAI	HT15X13	BN07-00035A	DA		-
HYUNDAI	HT17E11-200	BN07-00049A	DB		TN MODE
HYUNDAI	HT17E11-300	BN07-00093A	DC		HT17E11-300 ZPD panel
HYUNDAI	HT17E11-400	BN07-00094A	DD		HT17E11-400 normal panel
HYUNDAI	HT17E11-400	BN07-00095A	DE		HT17E11-400 ZPD panel code
HYUNDAI	HT17E12	BN07-00096A	DF		HT17E12 (Narow & slim Design)
HYUNDAI	HT17E12	BN07-00105A	DG		ZPD Panel code
HYUNDAI	HT15X15-D00	BN07-00146A	DH		"Development for Ares 15"" Hydis TV"
HYUNDAI	HT15X15-D01	BN07-00146B	DJ		"Derivation panel HPD for Ares 15"" Hydis TV "
HYUNDAI	HT17E13-100	BN07-00167A	DTH		"PINEHURST-2(IBM) PJT 17"" HYDIS PANEL Derivation"
HYUNDAI	HT17E13-100	BN07-00167B	DTZ		"PINEHURST-2(IBM) Hydis 17"" ZPD code Derivation"
ACER	L170E3	BN07-00044A	AA		TN(ADT)
ACER	M170EN05	BN07-00076A	AB		AU 17" Panel (Narrow & slim design)
ACER	M170EN05	BN07-00102A	AC		ZPD Panel code
ACER	M190EN02	BN07-00170A	AMH		"AU Monitor 19"" new panel development (P19-1S)"
ACER	M190EN02	BN07-00170B	AMZ		"AU 19"" ZPD code derivation (ZPD)"
ACER	M170EN06	BN07-00171A	ATH		"AU Monitor 17"" New panel development"
ACER	T260XW01	BN07-00163A	AMZ		"AU 26"" new panel developm
(NF26EO)"					
ACER	A201SN01	BN07-00177A	ATZ		"AU TV panel 20.1"" TN SVGA new panel development"
ACER	M170EN06	BN07-00171B	ATZ		"AU Monitor 17"" ZPD code Derivation
ACER	T315XW01	BN07-00194A	AMZ		AU 32" new
ACER	M170EG01	BN07-00192A	ATH		AU TN PSWG type new Panel code
ACER	M170EG01	BN07-00192B	ATZ		AU TN PSWG type NEW panel code derivation
CHIMEI	M170E3-LO1	BN07-00050A	CA		TN PANEL
CHIMEI	M150X3-L01	BN07-00051A	CB		COMPATIBLE
CHIMEI	M170E4-L01	BN07-00052A	CC		MVA PANEL
CHIMEI	M150X2-L01	BN07-00066A	CD		CHIME 15"I PVA PANEL
CHIMEI	M150X3-L01	BN07-00079A	CE		Chimei ZPD panel
CHIMEI	M170E3-L01	BN07-00103A	CF		ZPD Panel code
CHIMEI	M170E4-L01	BN07-00104A	CG		ZPD Panel code
CHIMEI	V296W1-L01	BN07-00120A	CH		MVA
CHIMEI	M170E6-L02	BN07-00126A	CJ		HIGHLAND 17" LOW PANEL
CHIMEI	M190E2-L01	BN07-00131A	CK		GH19AS,BS CHIMEI PANEL
CHIMEI	M150X4-L06	BN07-00137A	CL		15" Narrow & Slim panel
CHIMEI	M170E6-L01	BN07-00133A	CM		"2003-03-11 vendor change"
CHIMEI	M170E6-L01	BN07-00133B	CN		"ZPD derivation panel"
CHIMEI	V201V1-T01	BN07-00135A	CP		"CHIMEI 20.1"" panel development"
CHIMEI	M170E6-L02	BN07-00126B	CQ		"HIGHLAND 17"" LOW PANEL ZPD derivation panel"
CHIMEI	M170E6-L05	BN07-00152A	CR		"CMO 17"" new panel development code"
CHIMEI	M170E6-L05	BN07-00152B	CS		"CMO 17"" ZPD panel code derivation"
CHIMEI	M150X4-L06	BN07-00137B	CT		Chimei 15" Narrow & Slim panel ZPD derivation
CHIMEI	M170E5-L05	BN07-00165A	CTH		CMO 17" new panel development code (GOYA2-PJT)
CHIMEI	M170E5-L05	BN07-00165B	CTZ		CMO 17" ZPD panel(GOYA2-PJT)